

FIG. 1 PRIOR ART

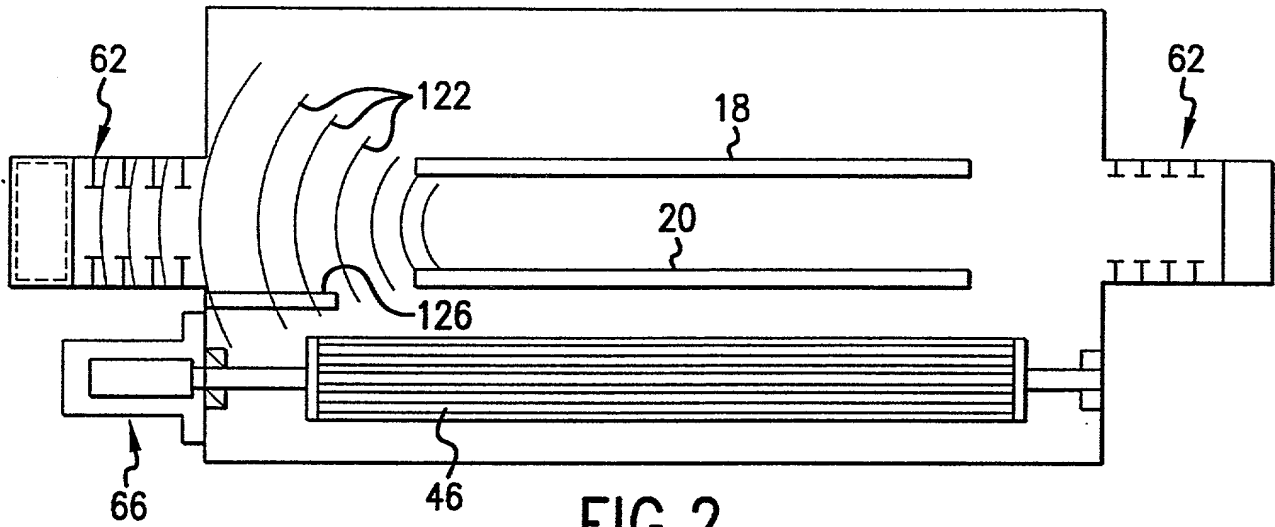


FIG. 2
(PRIOR ART)

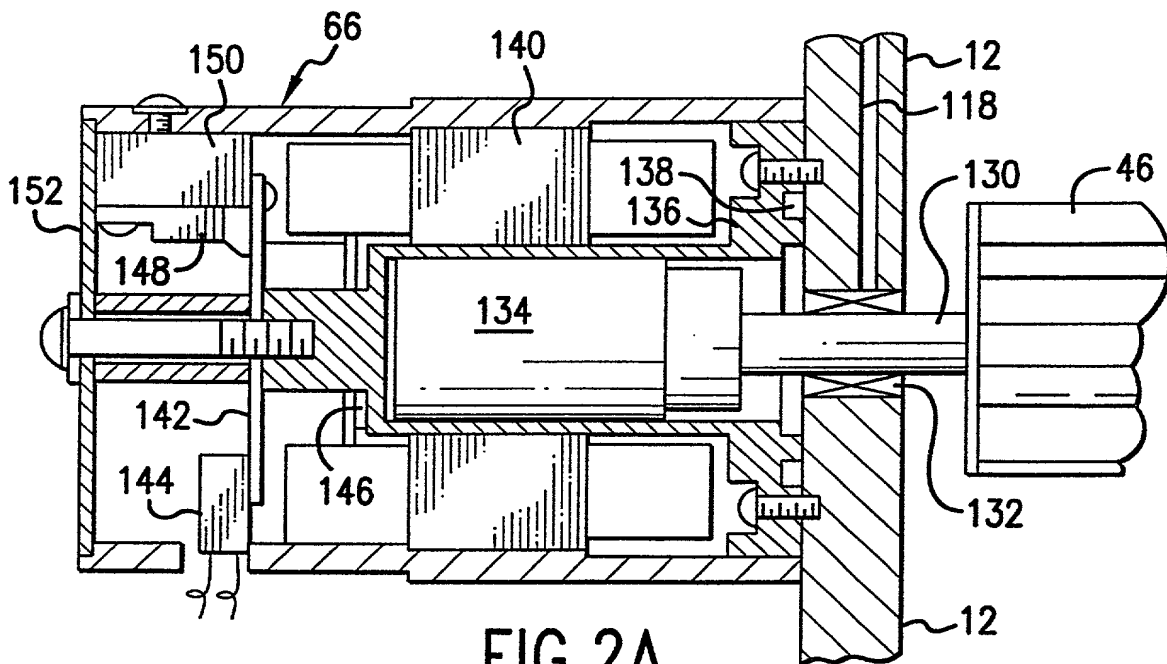


FIG. 2A
(PRIOR ART)

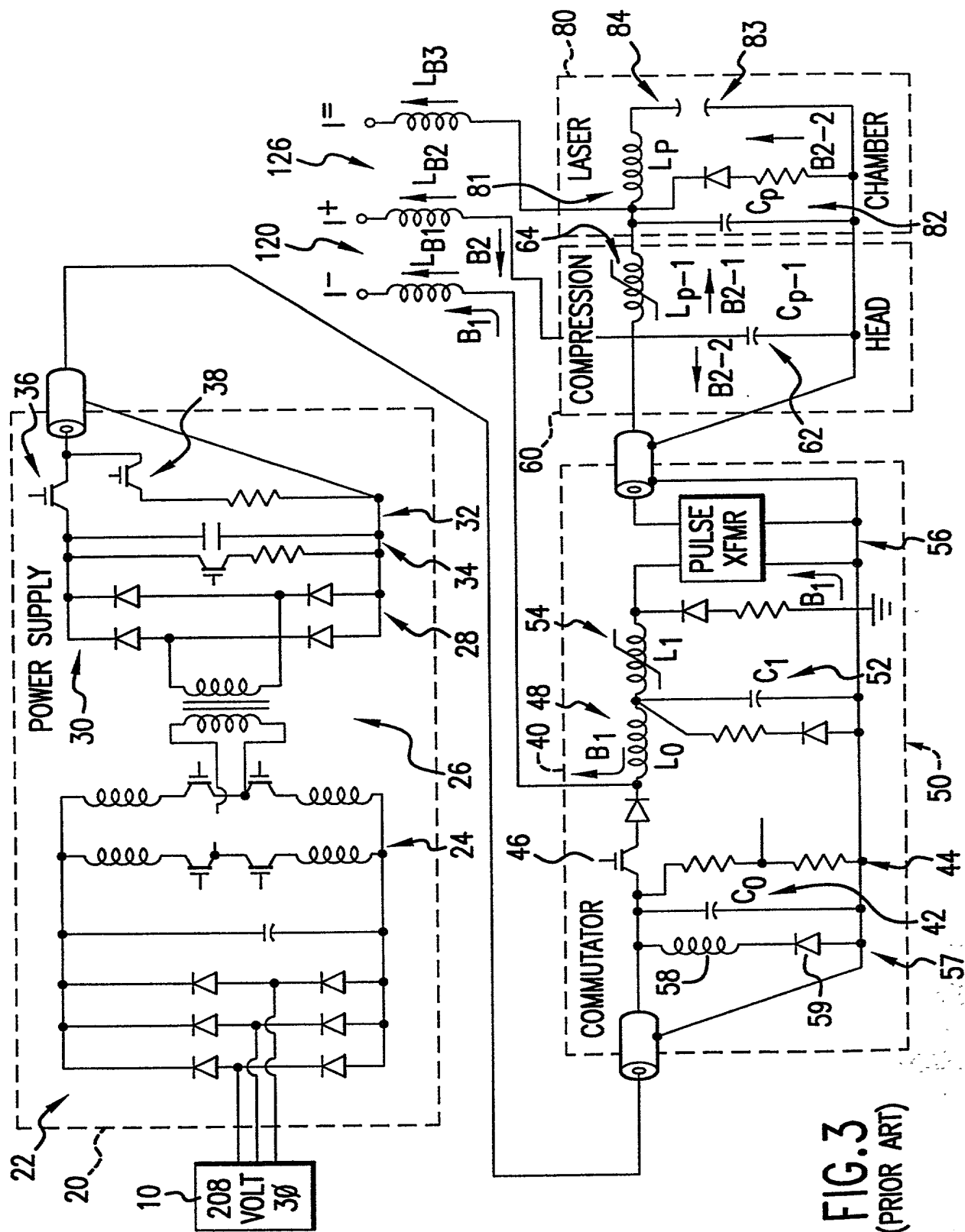


FIG. 3
(PRIOR ART)

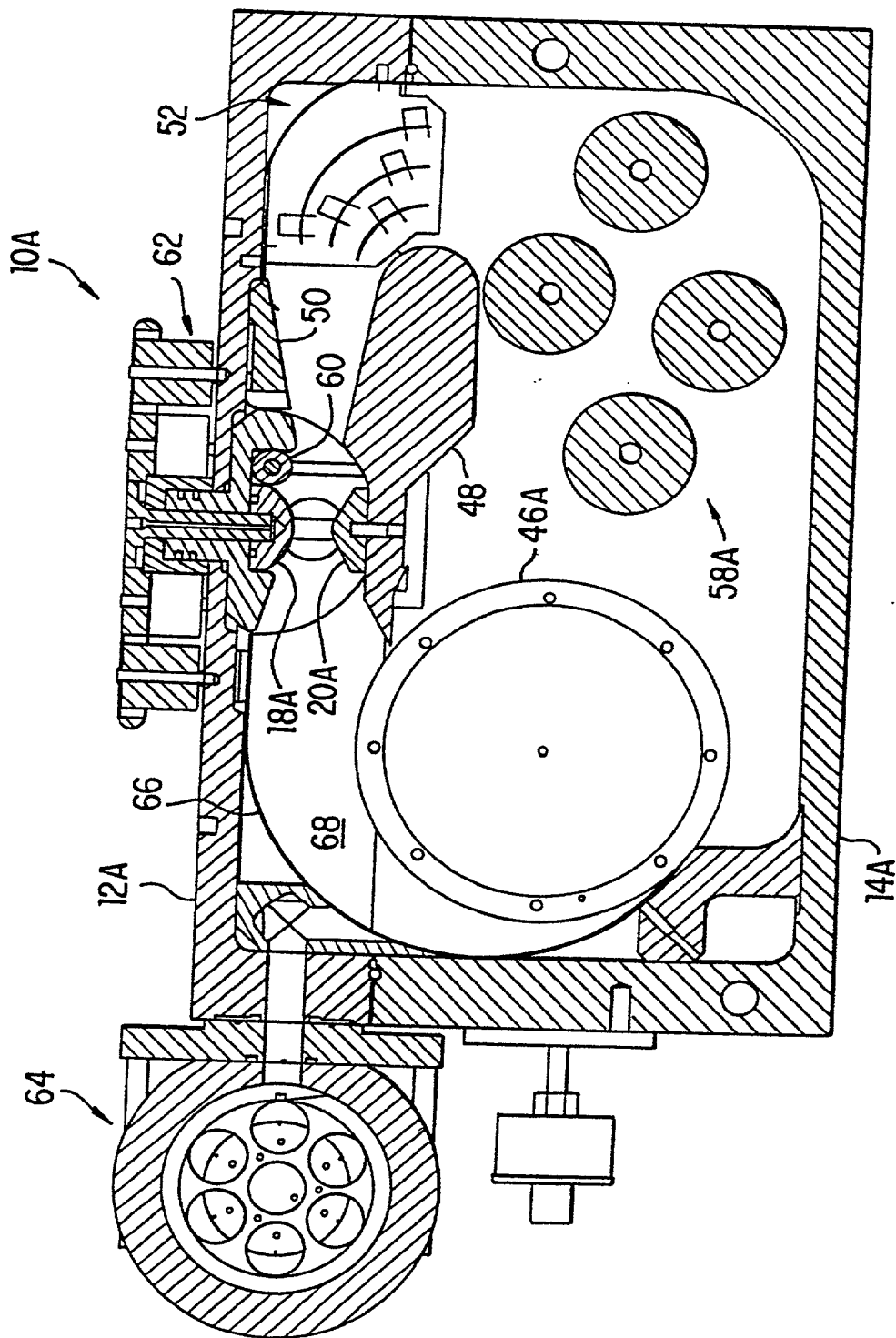


FIG. 4A

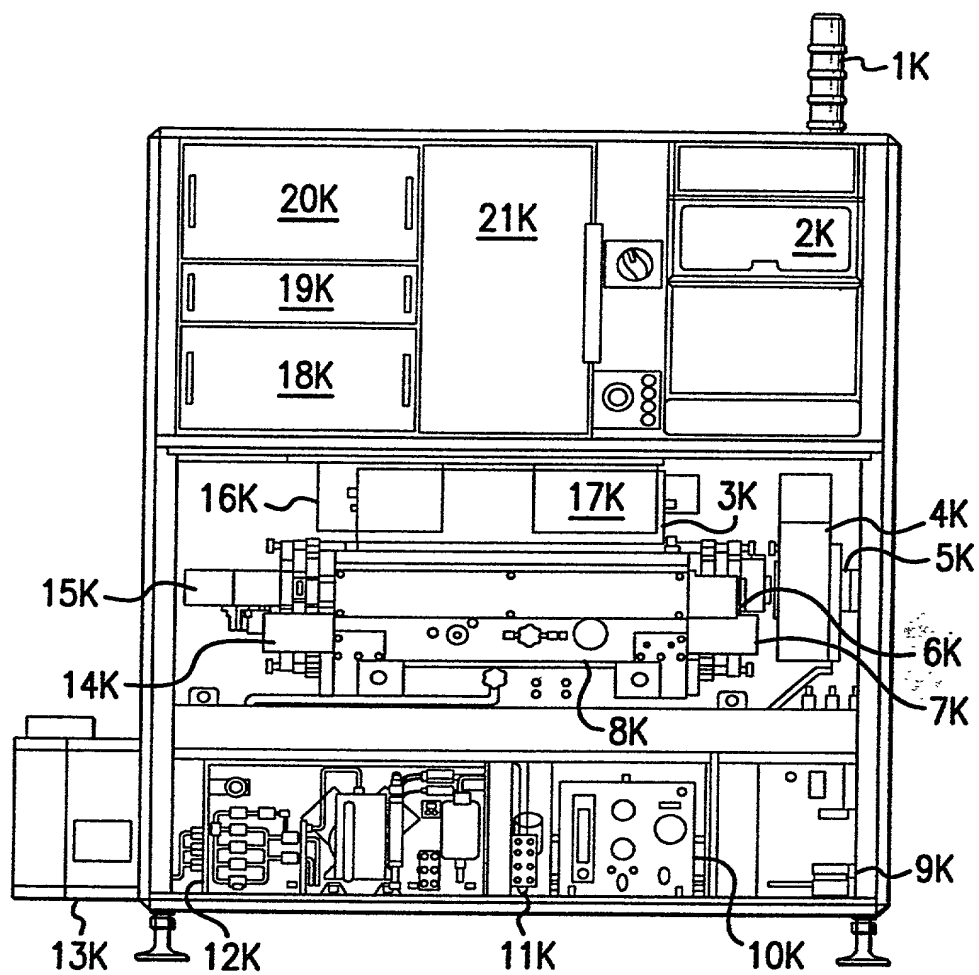


FIG.4B

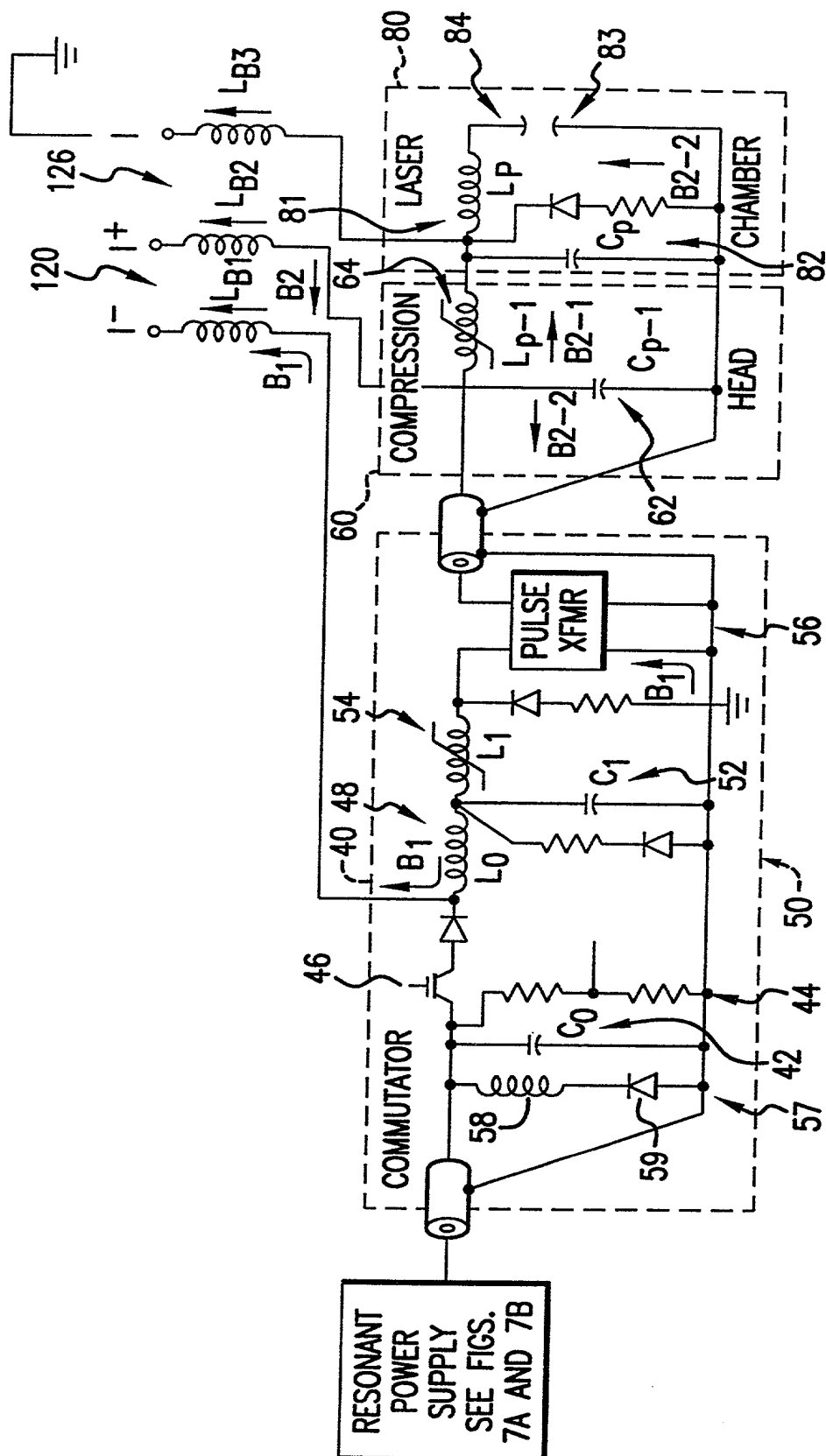


FIG.5

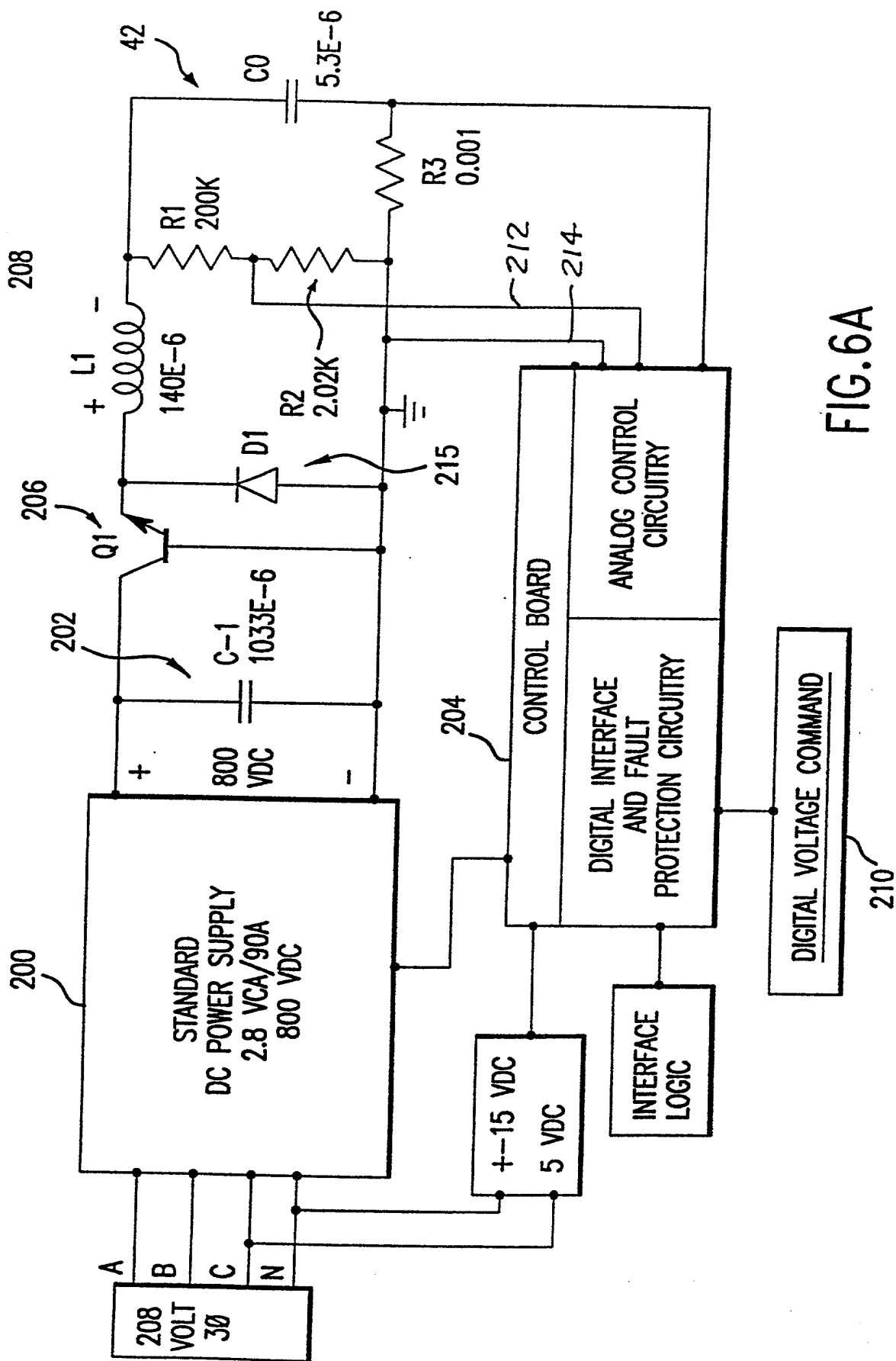


FIG. 6A

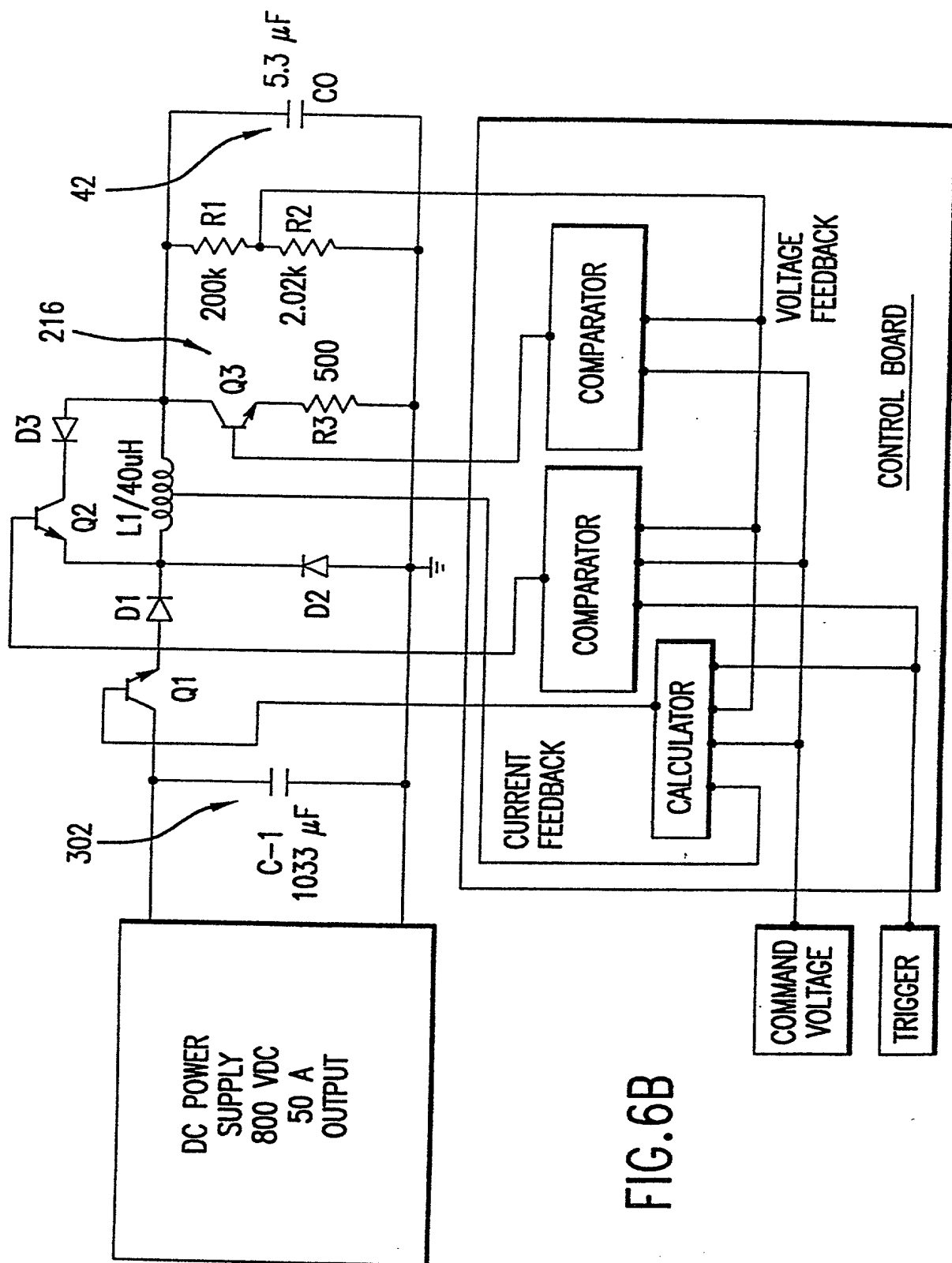


FIG. 6B

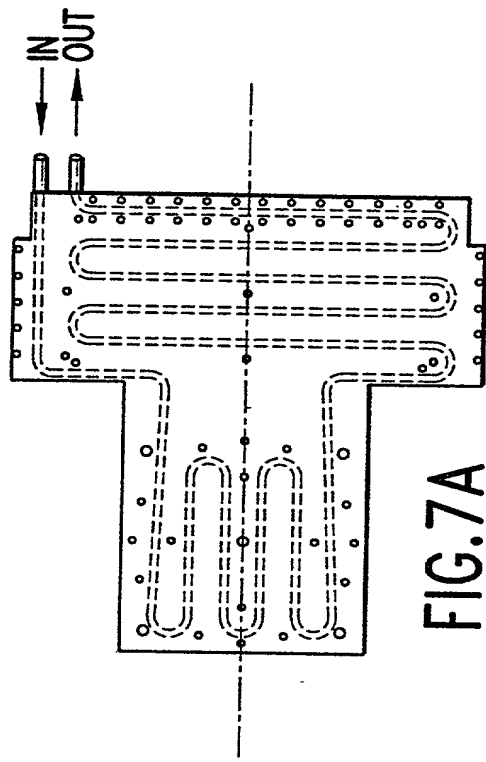


FIG. 7A

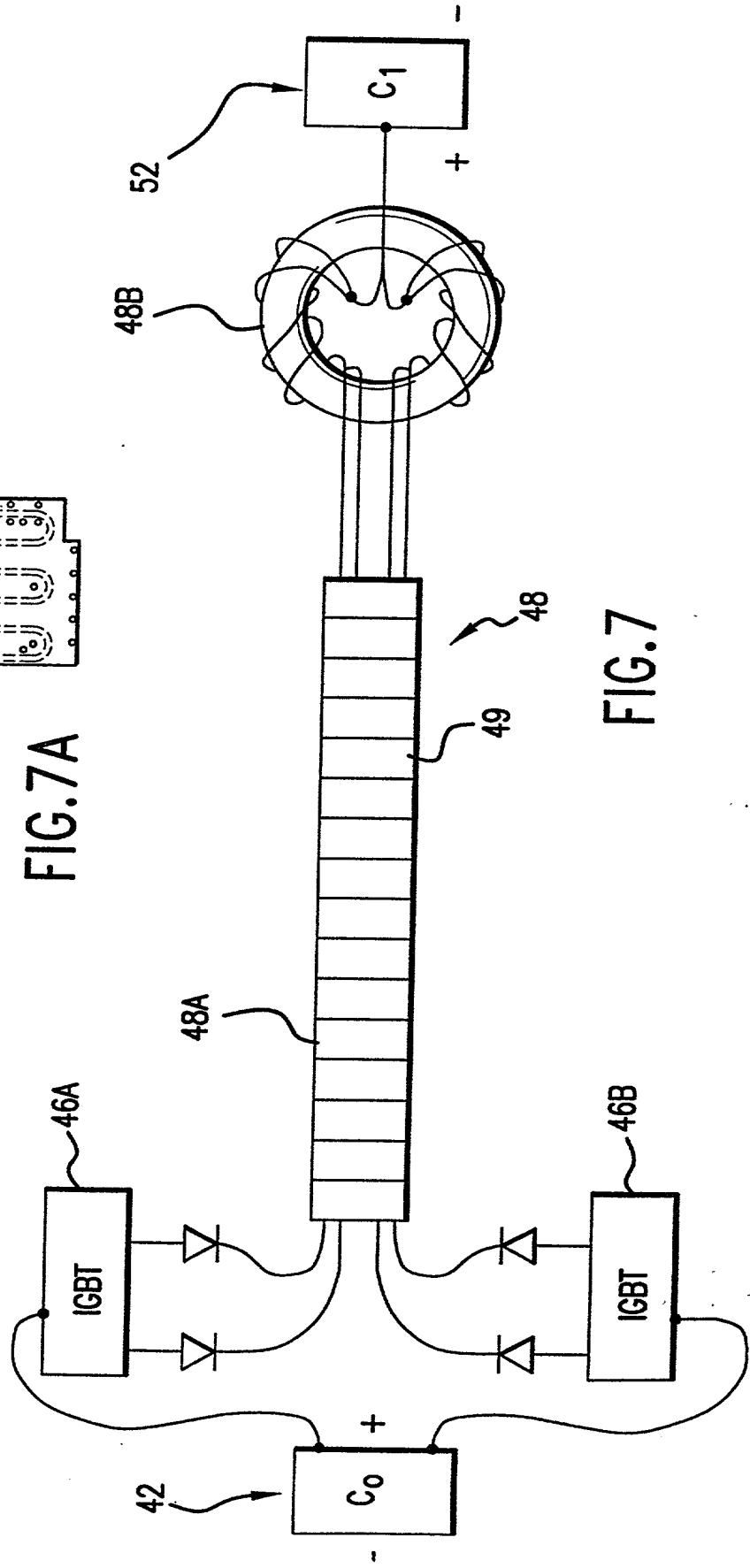


FIG. 7

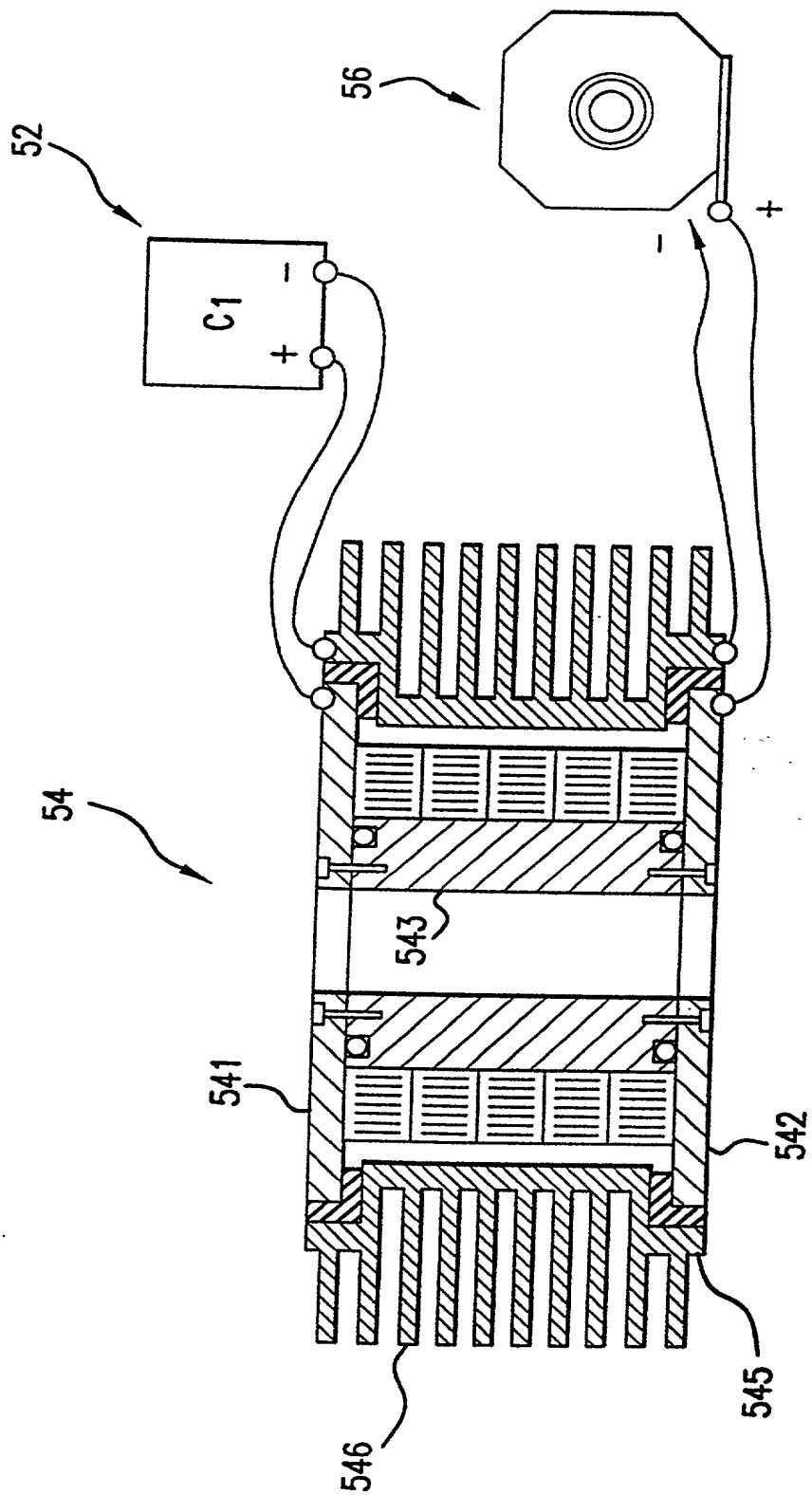


FIG.8

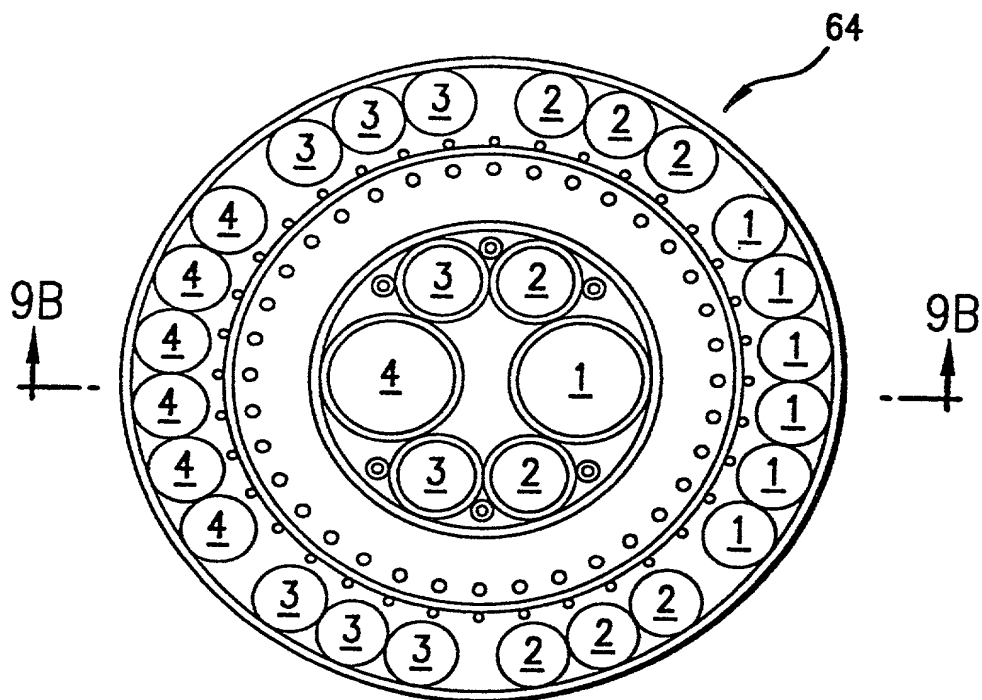


FIG. 9A

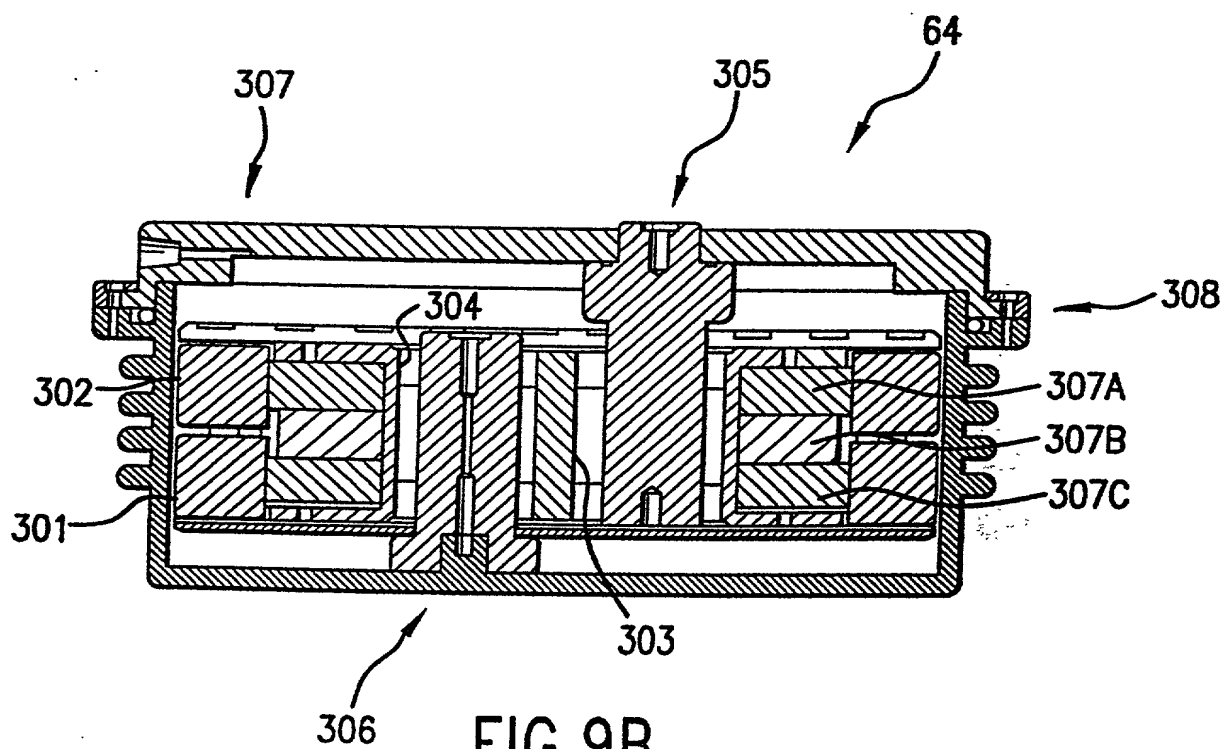


FIG.9B

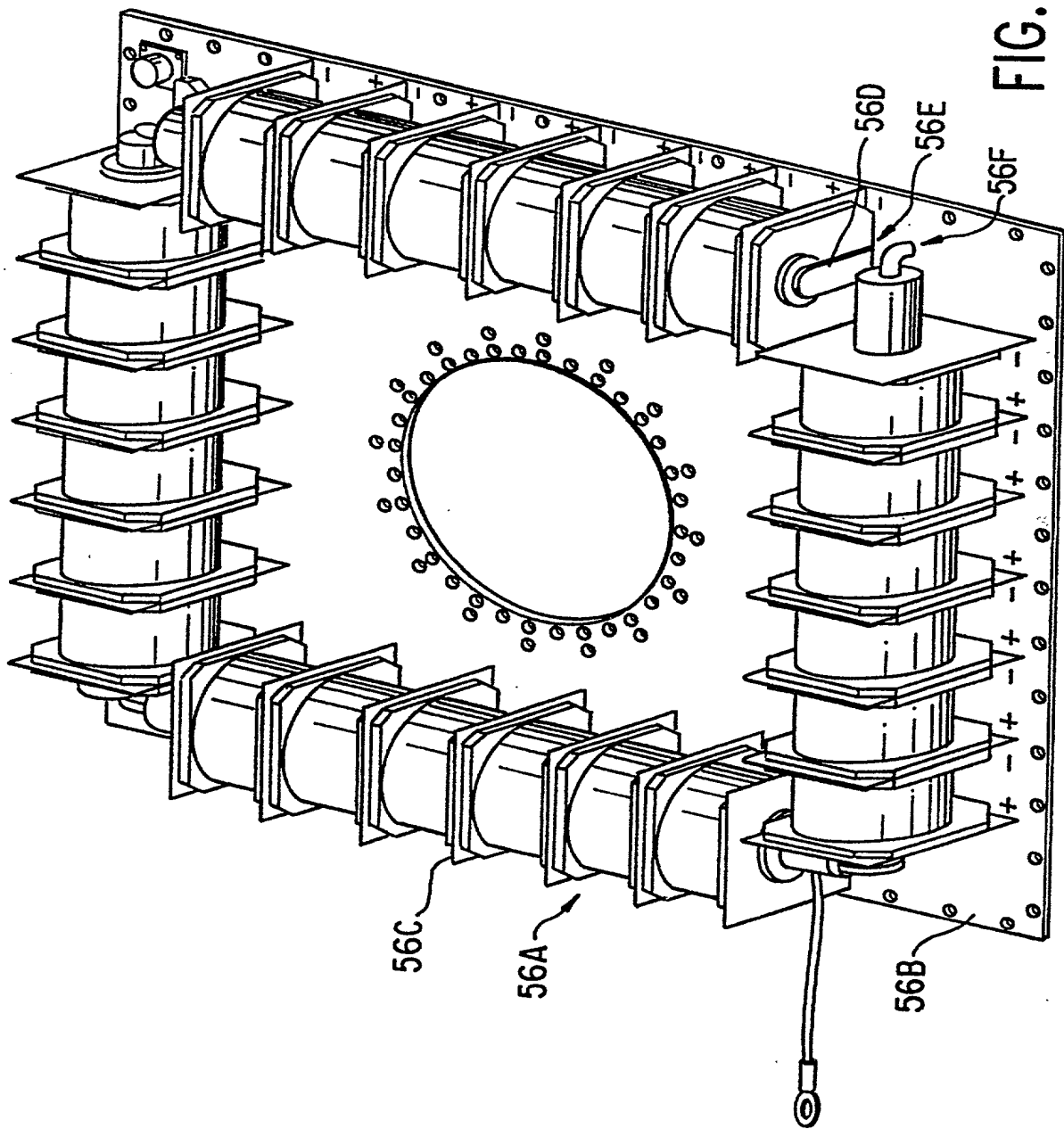


FIG. 10

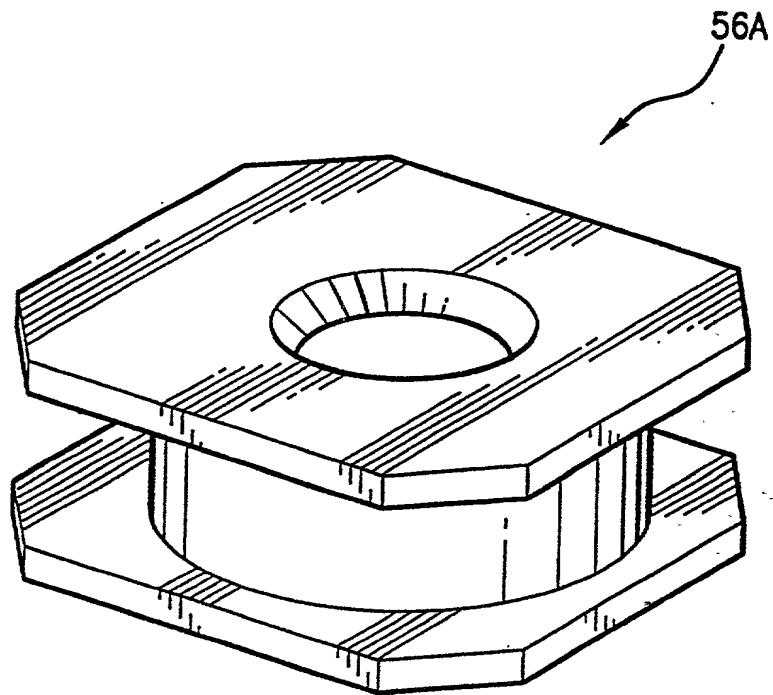


FIG.10A

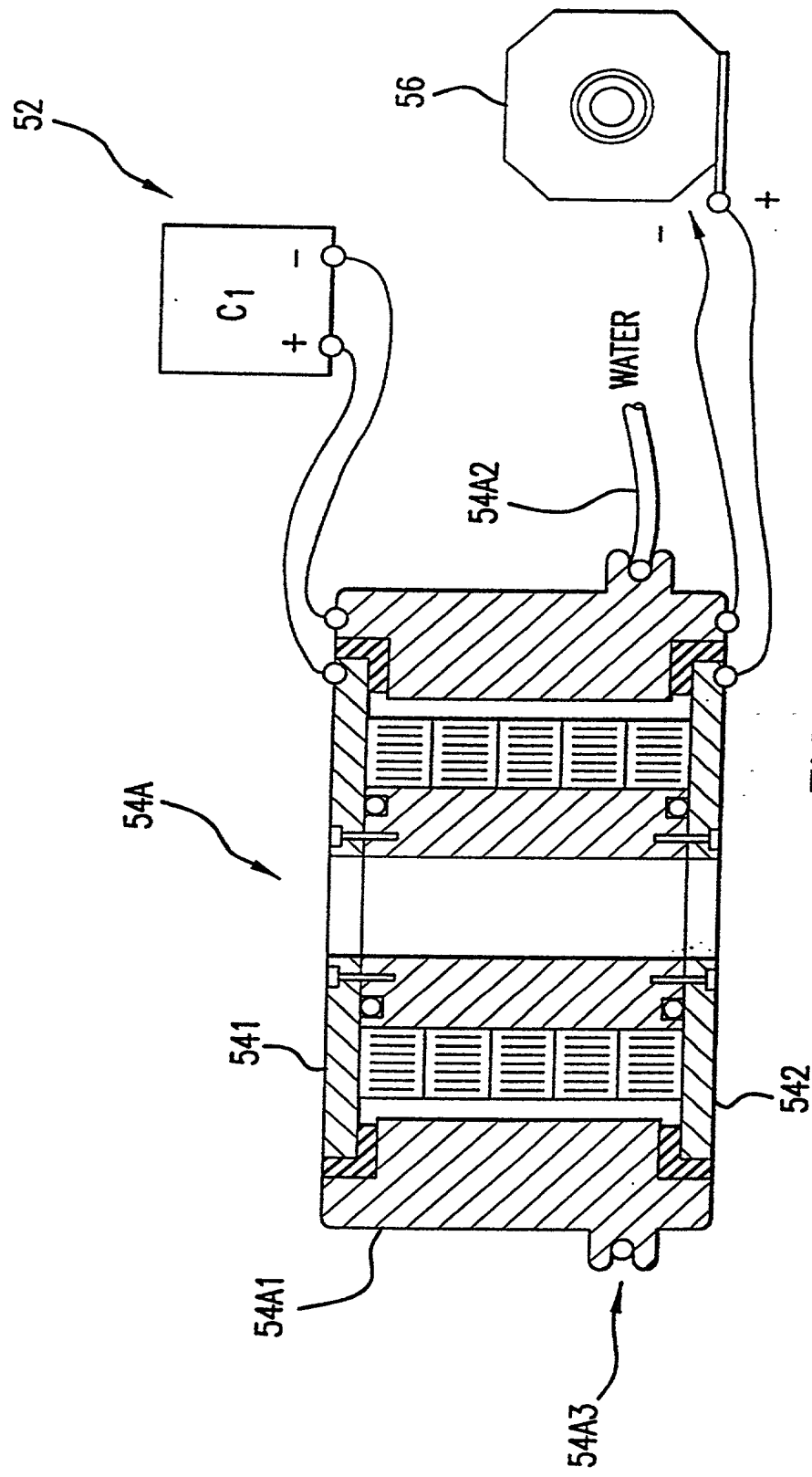
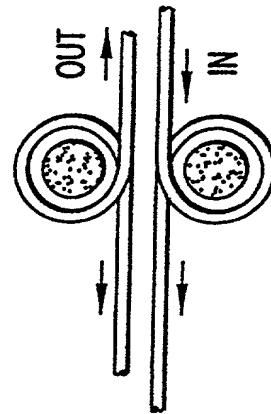
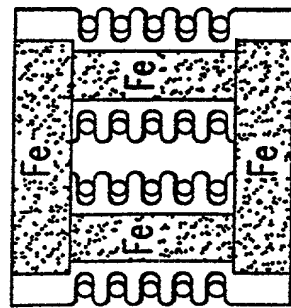
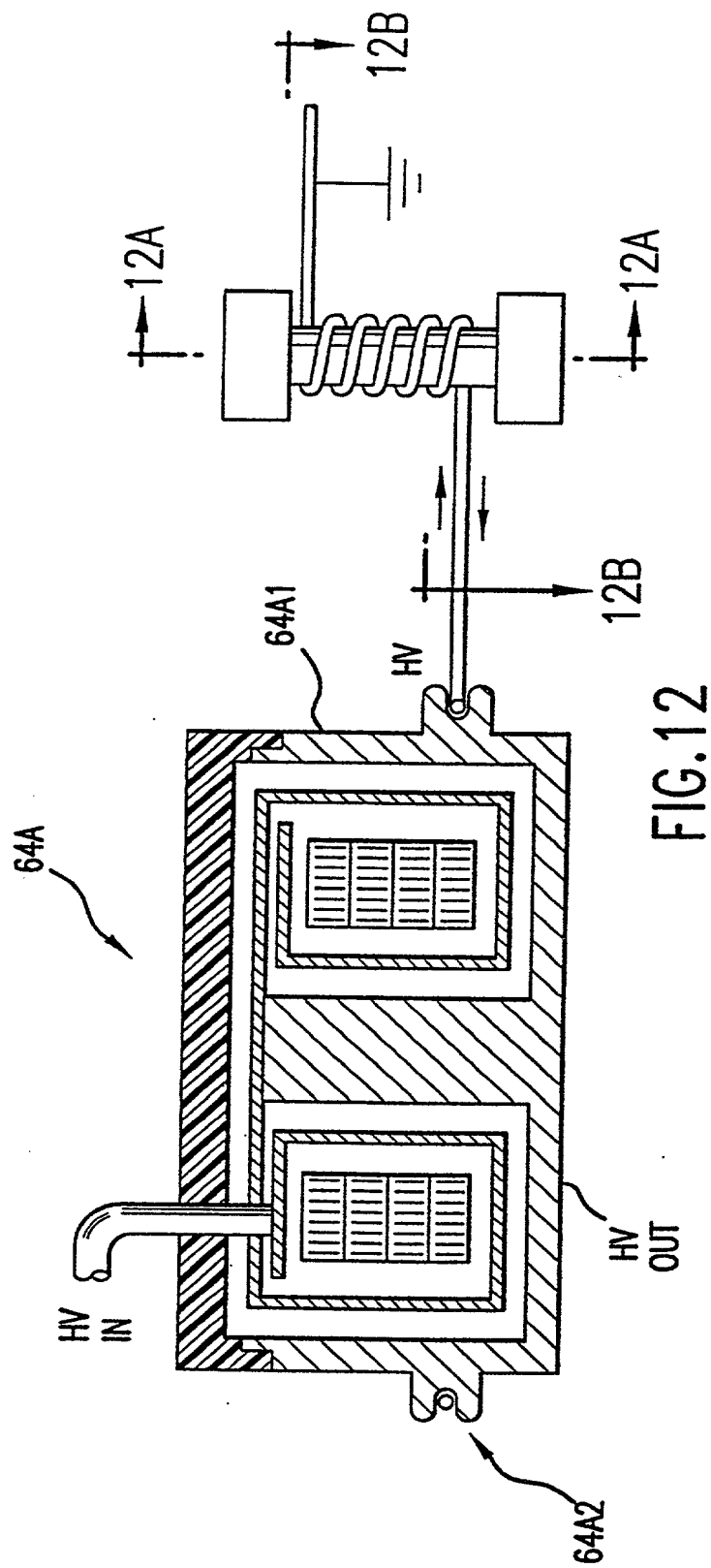


FIG.11



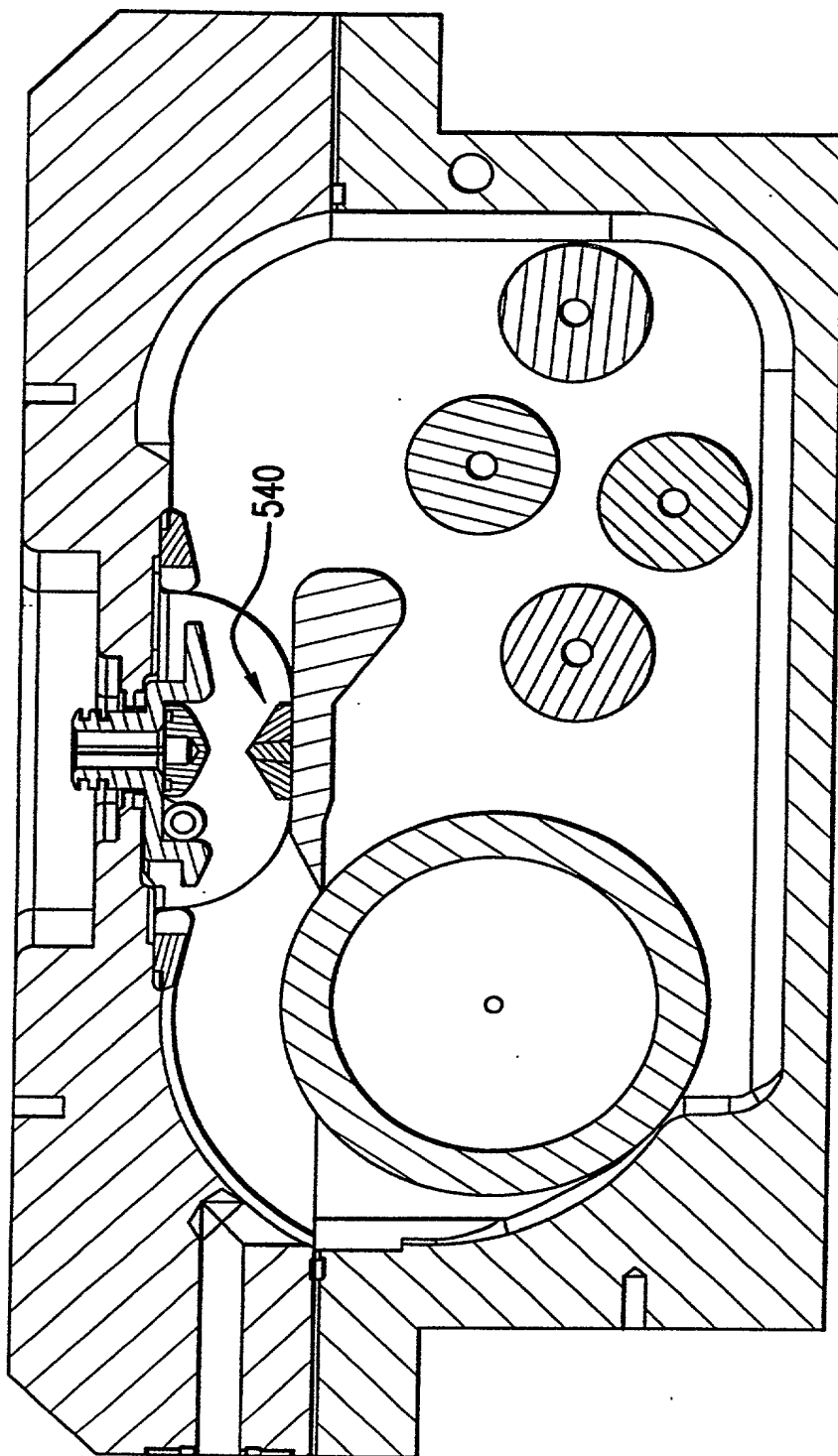


FIG.13

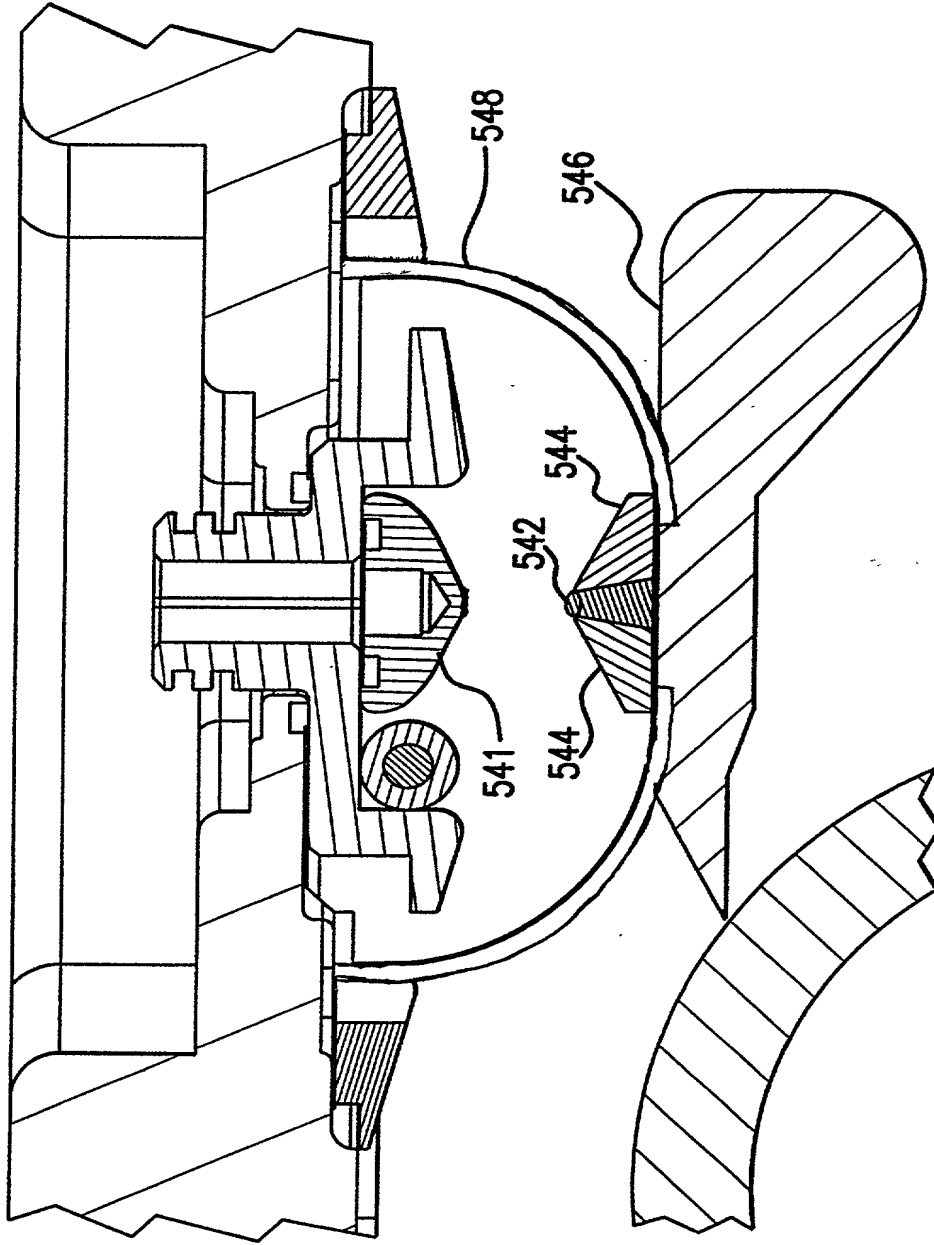


FIG. 13A (1)

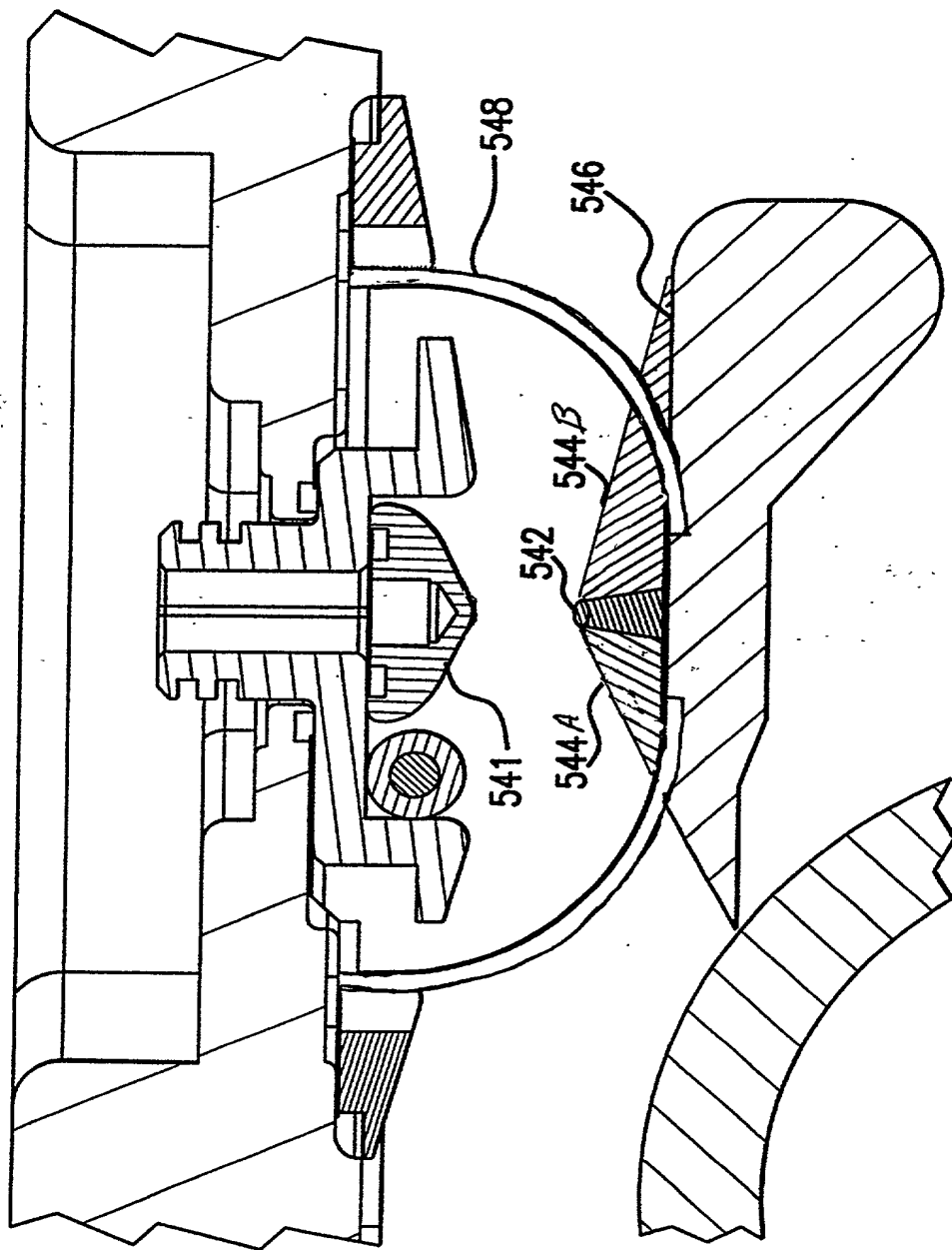


FIG. 13A(2)

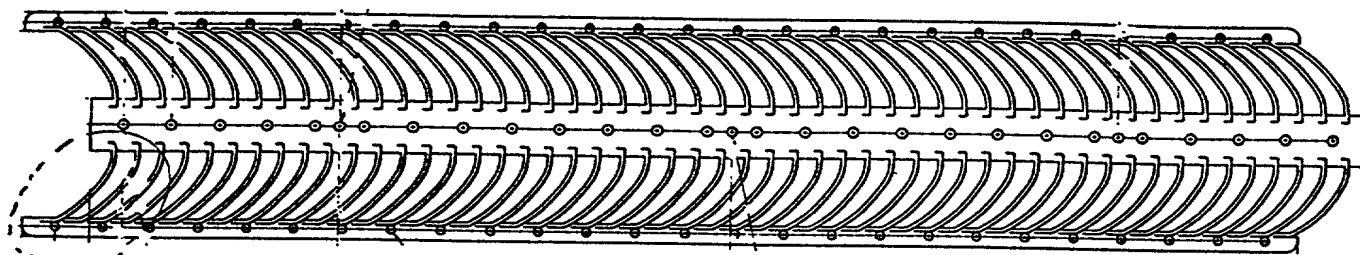


FIG. 13A(3)

FIG. 13A(7)

FIG. 13A(8)

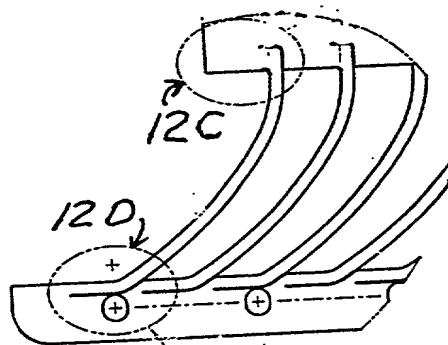
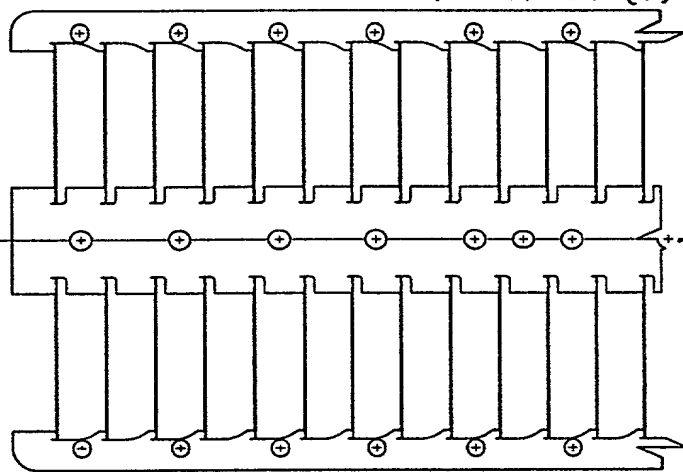
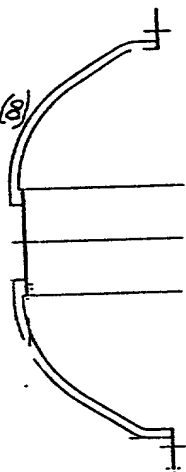
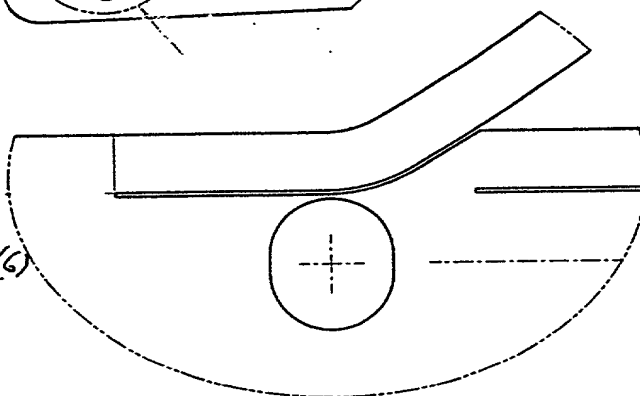


FIG. 13A(4)

FIG. 13A

FIG. 13A(5)

FIG. 13A(6)



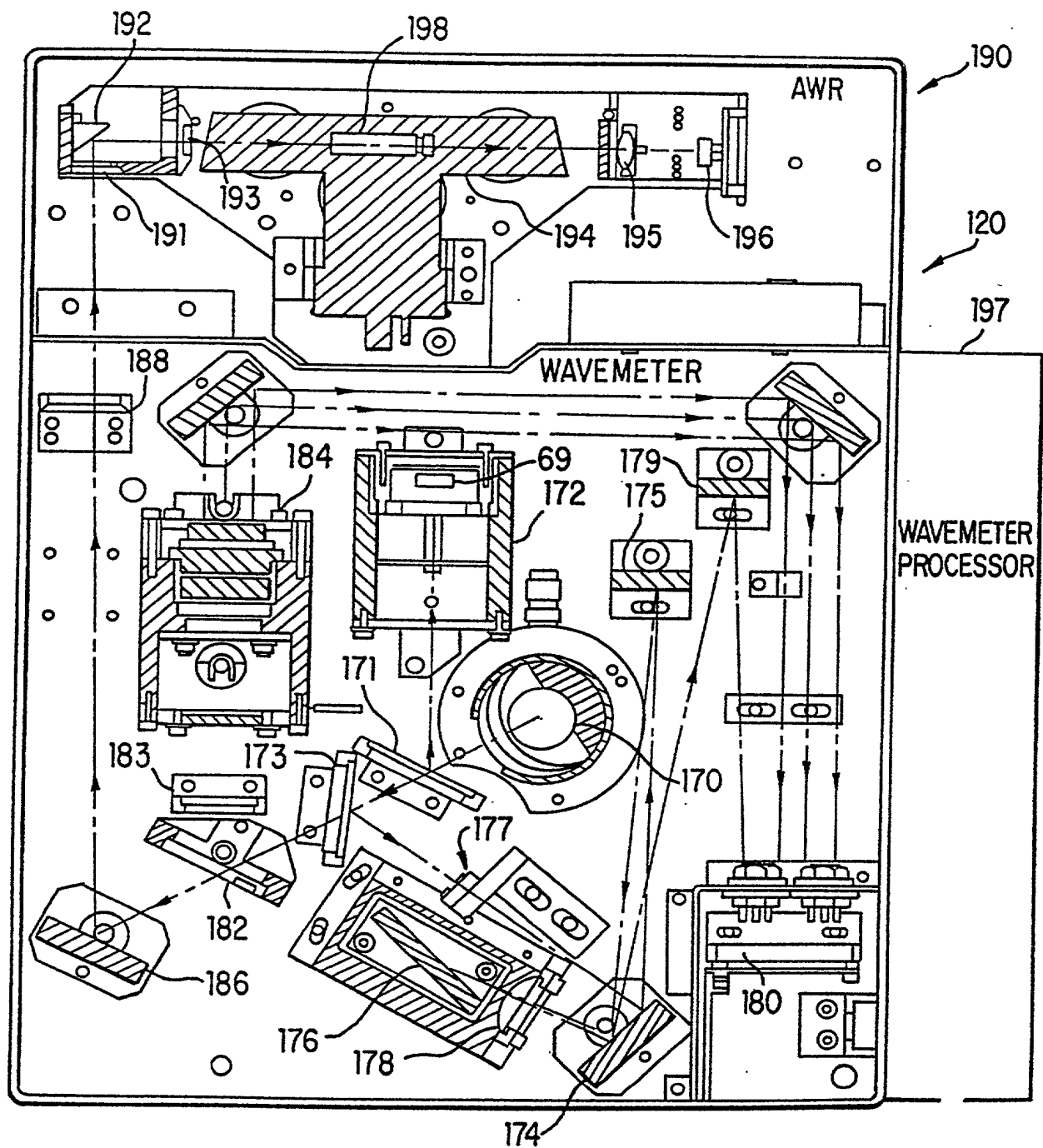


FIG.14

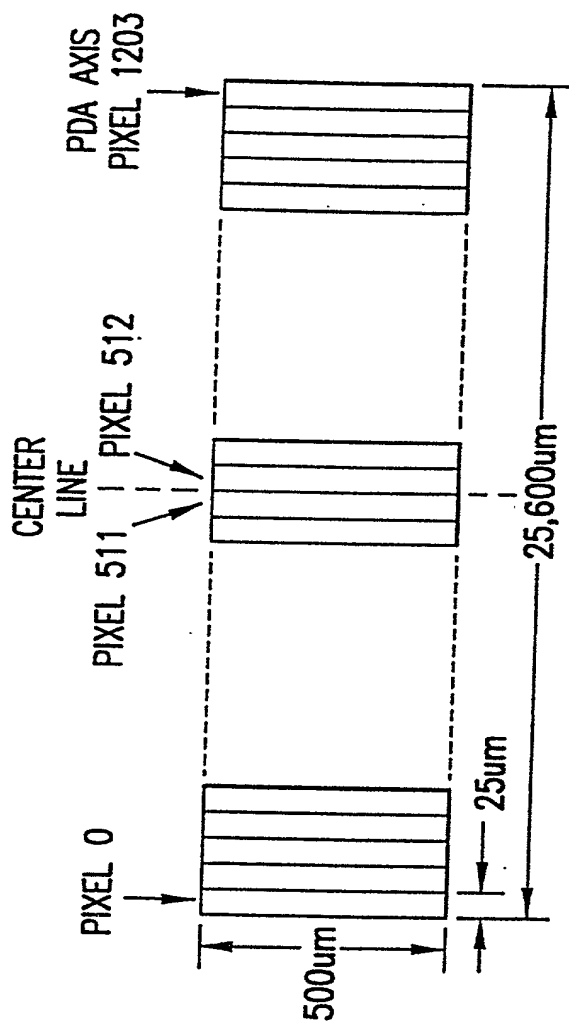


FIG.14A

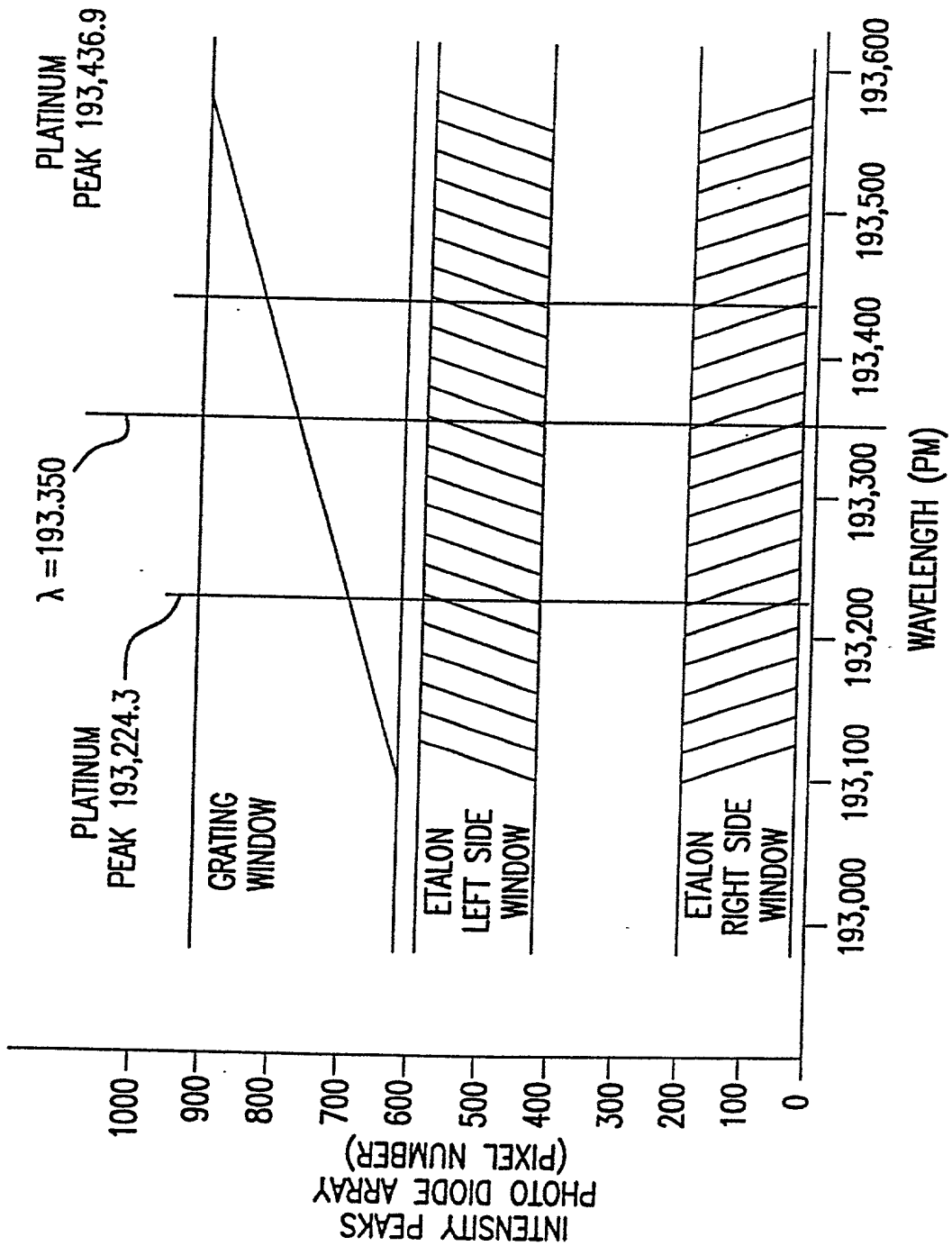


FIG.14B

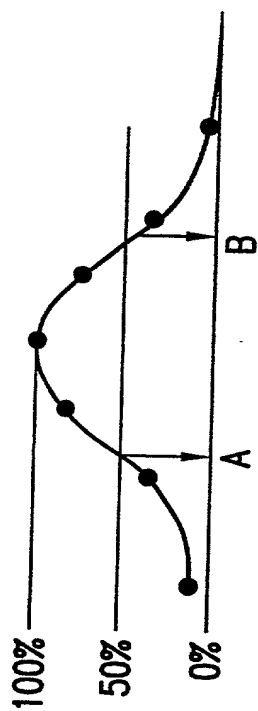


FIG.14C

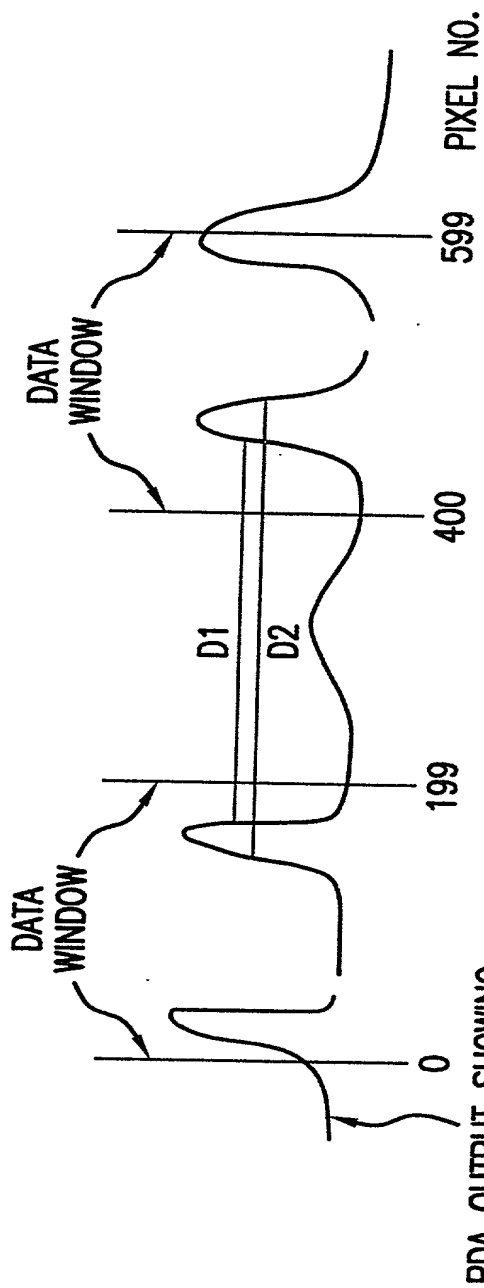


FIG.14D

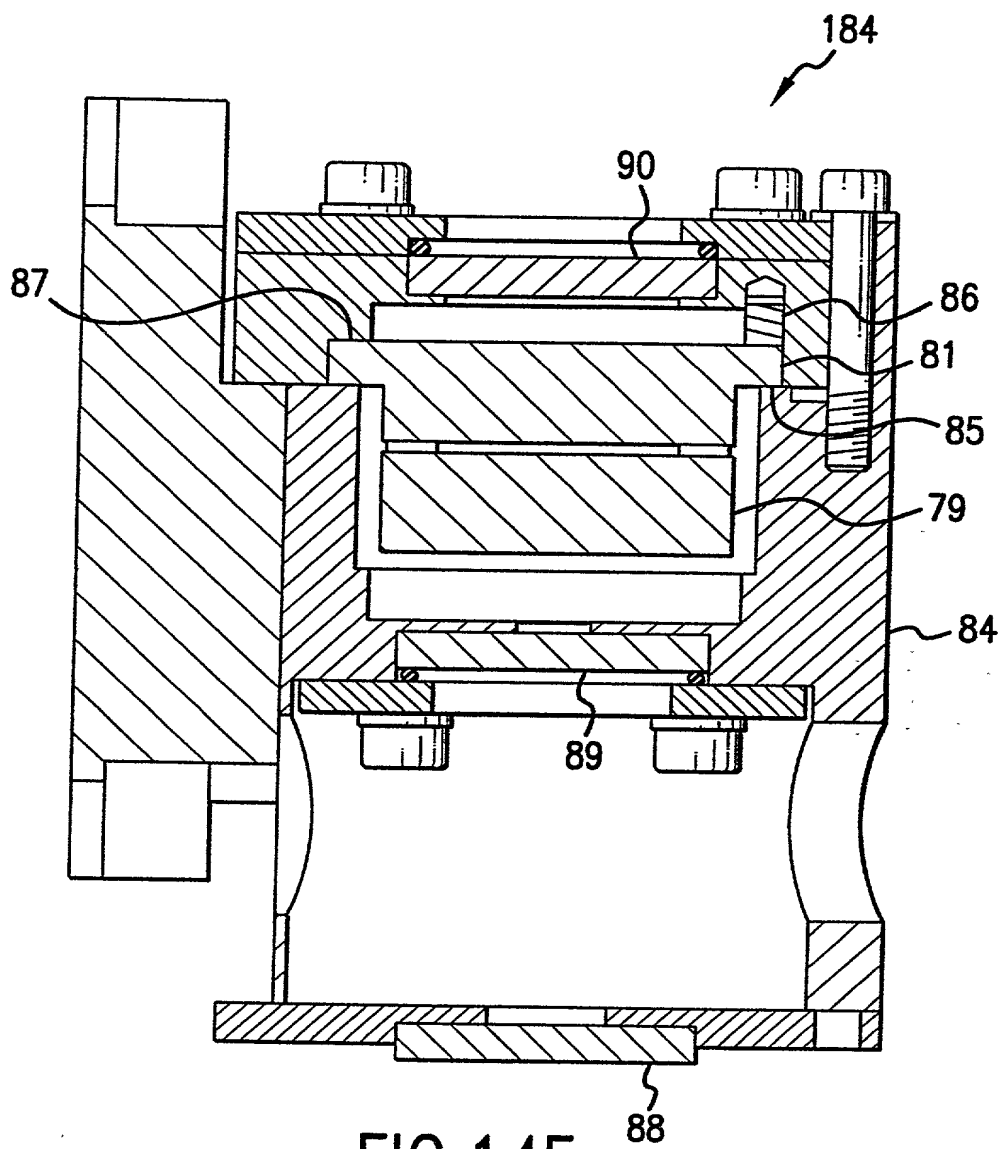


FIG.14E

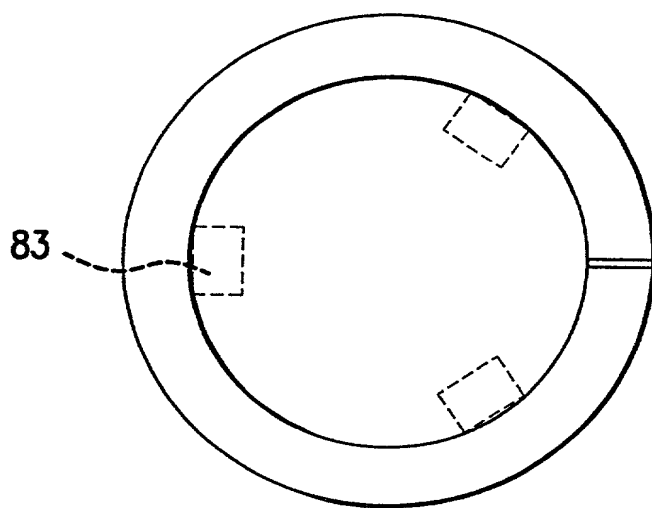


FIG. 14F

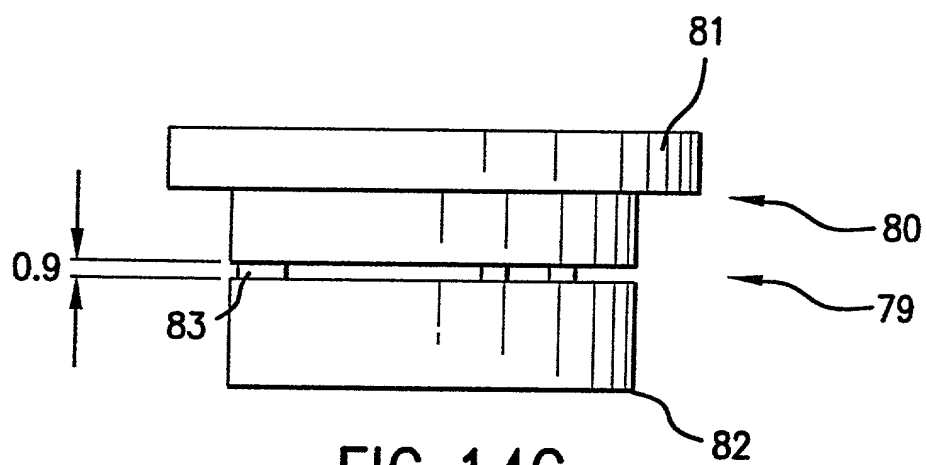


FIG. 14G

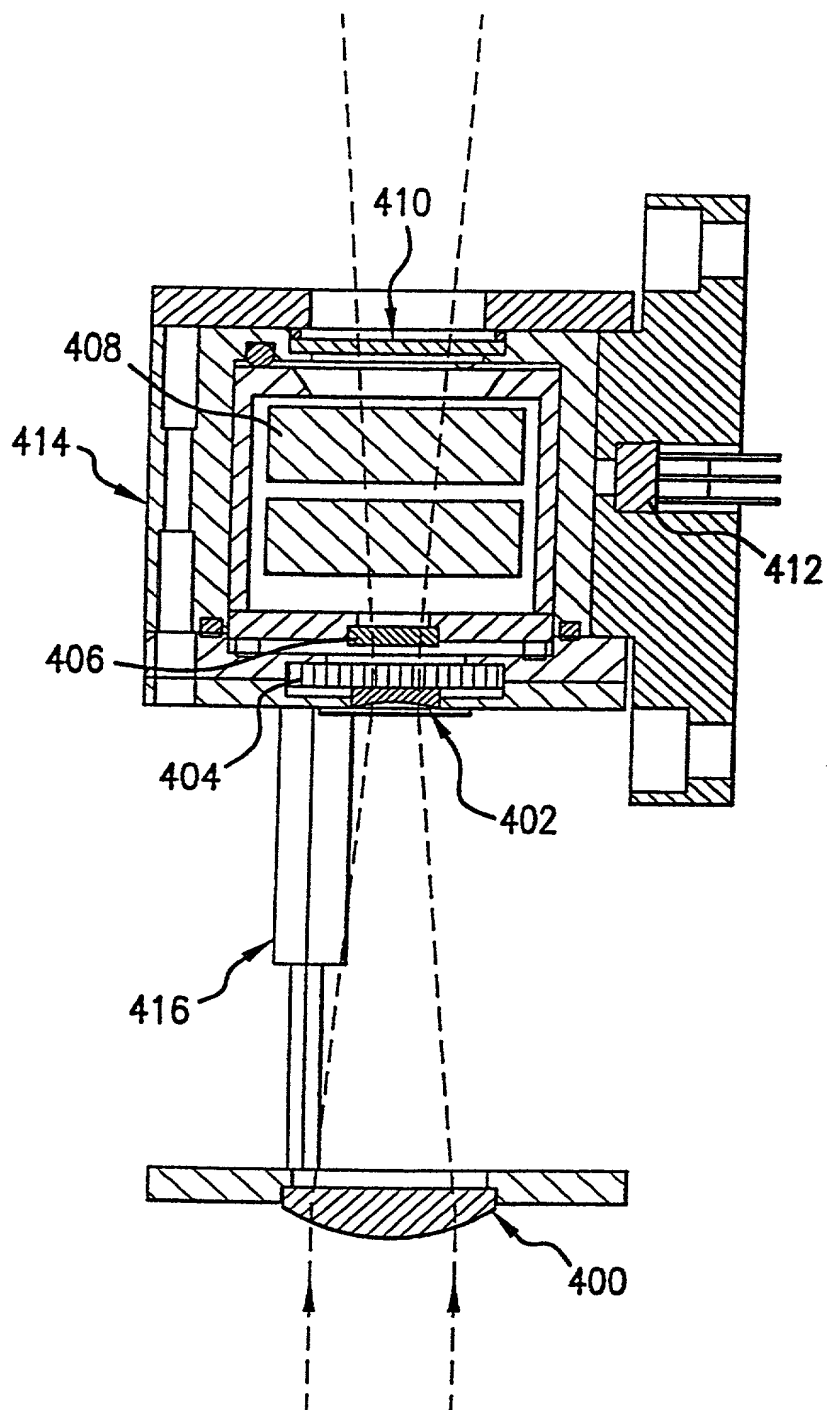


FIG.14H

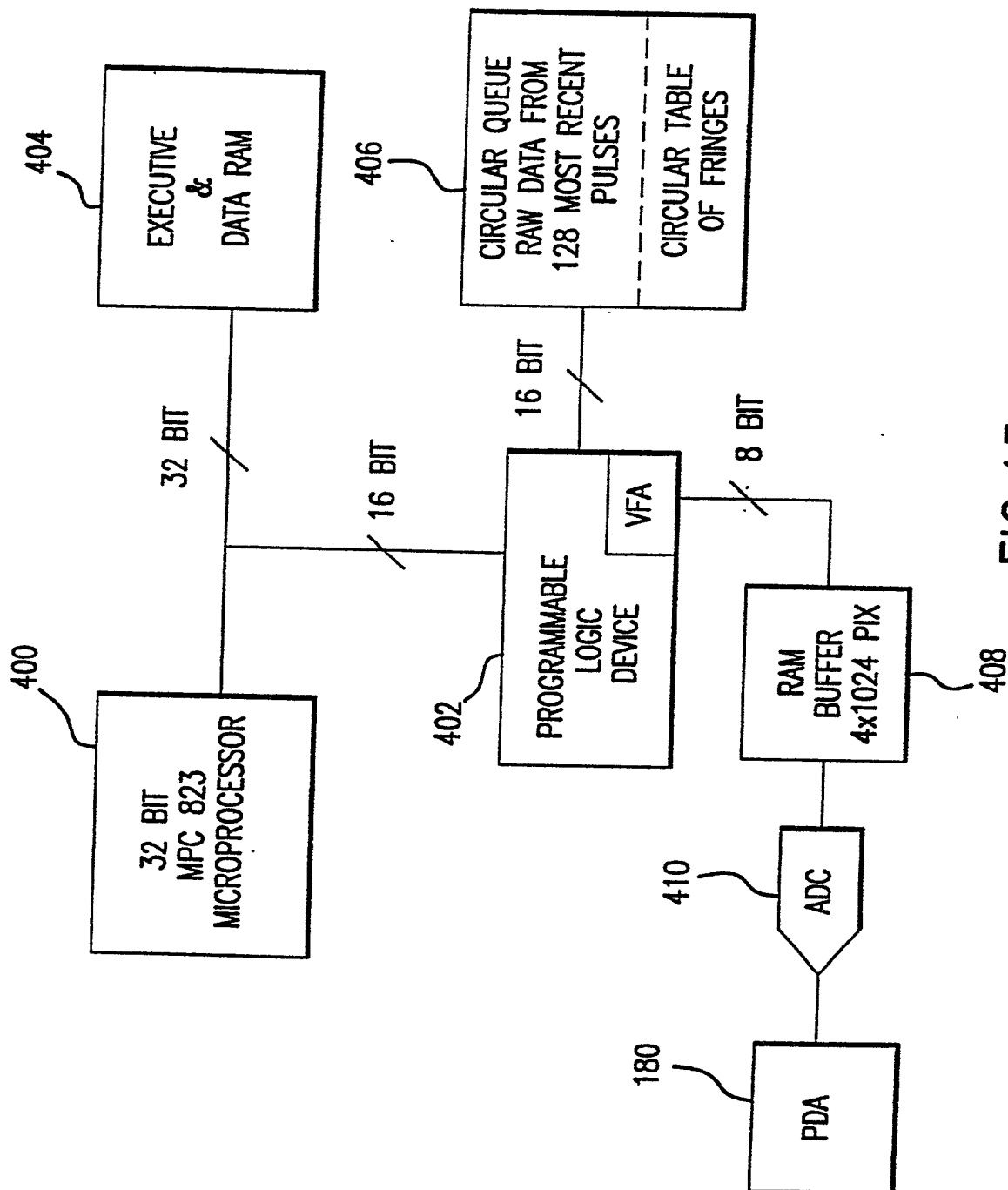


FIG. 15

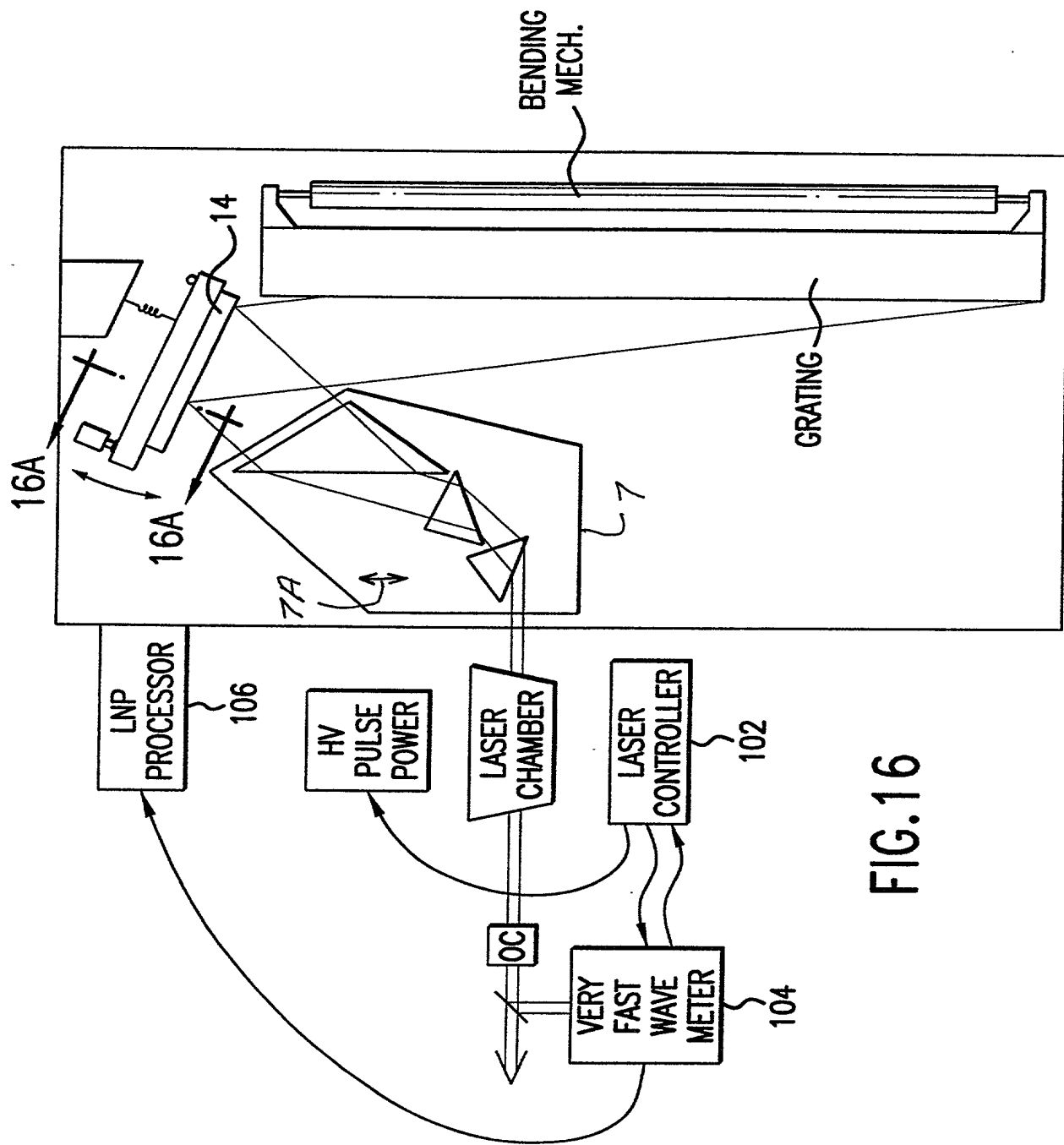


FIG.16

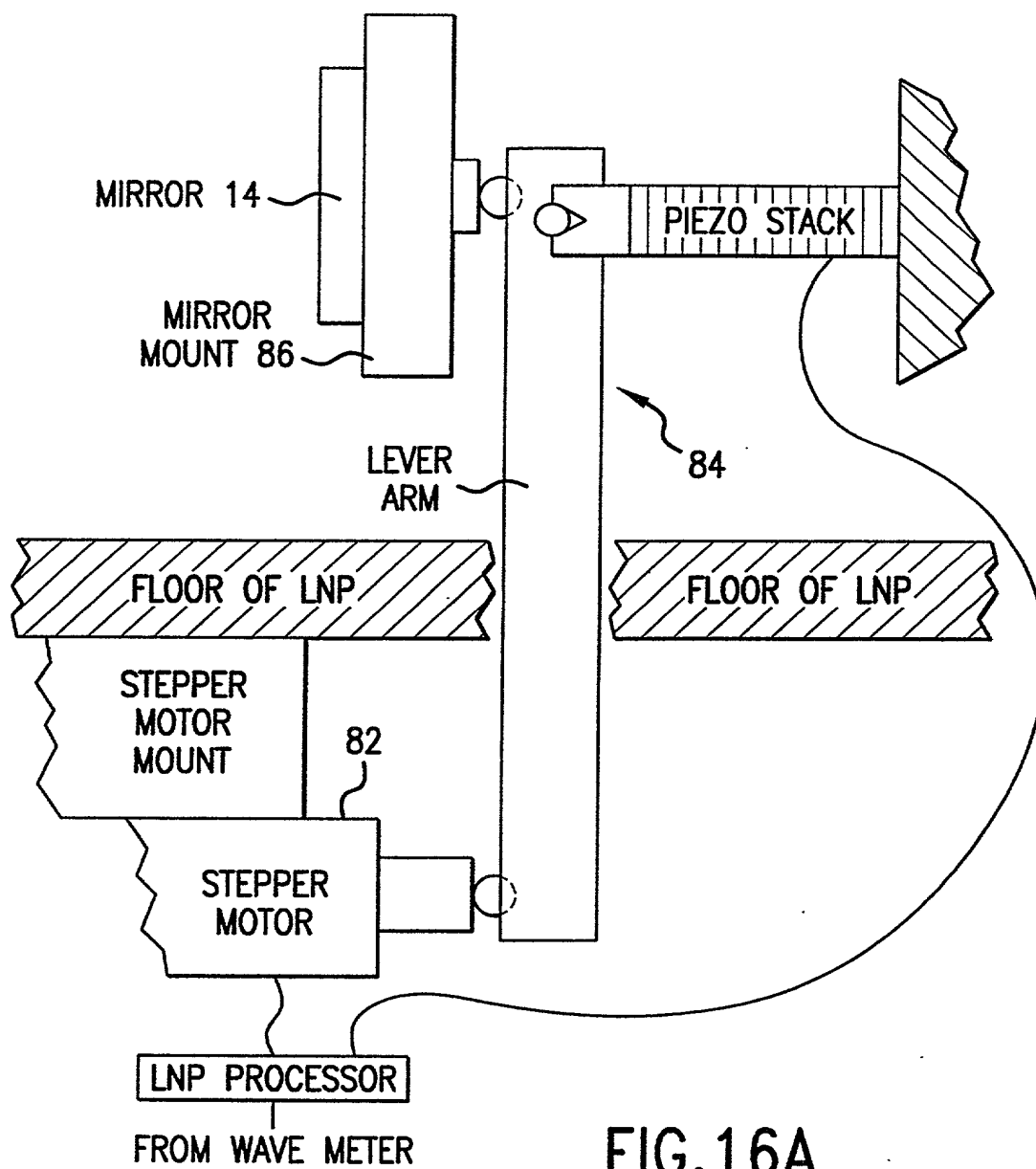


FIG.16A

FIG. 16B1

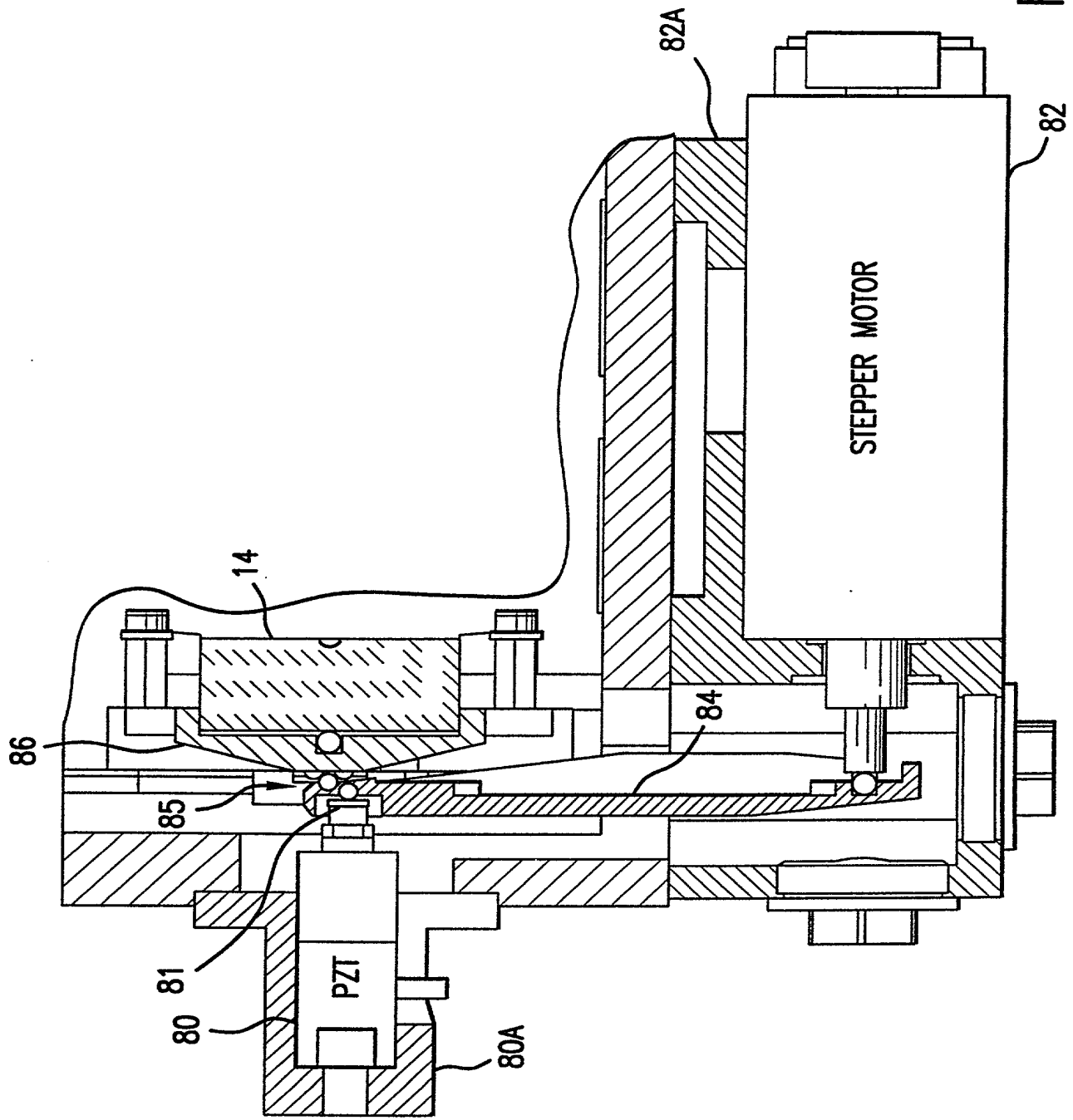


FIG. 16B1

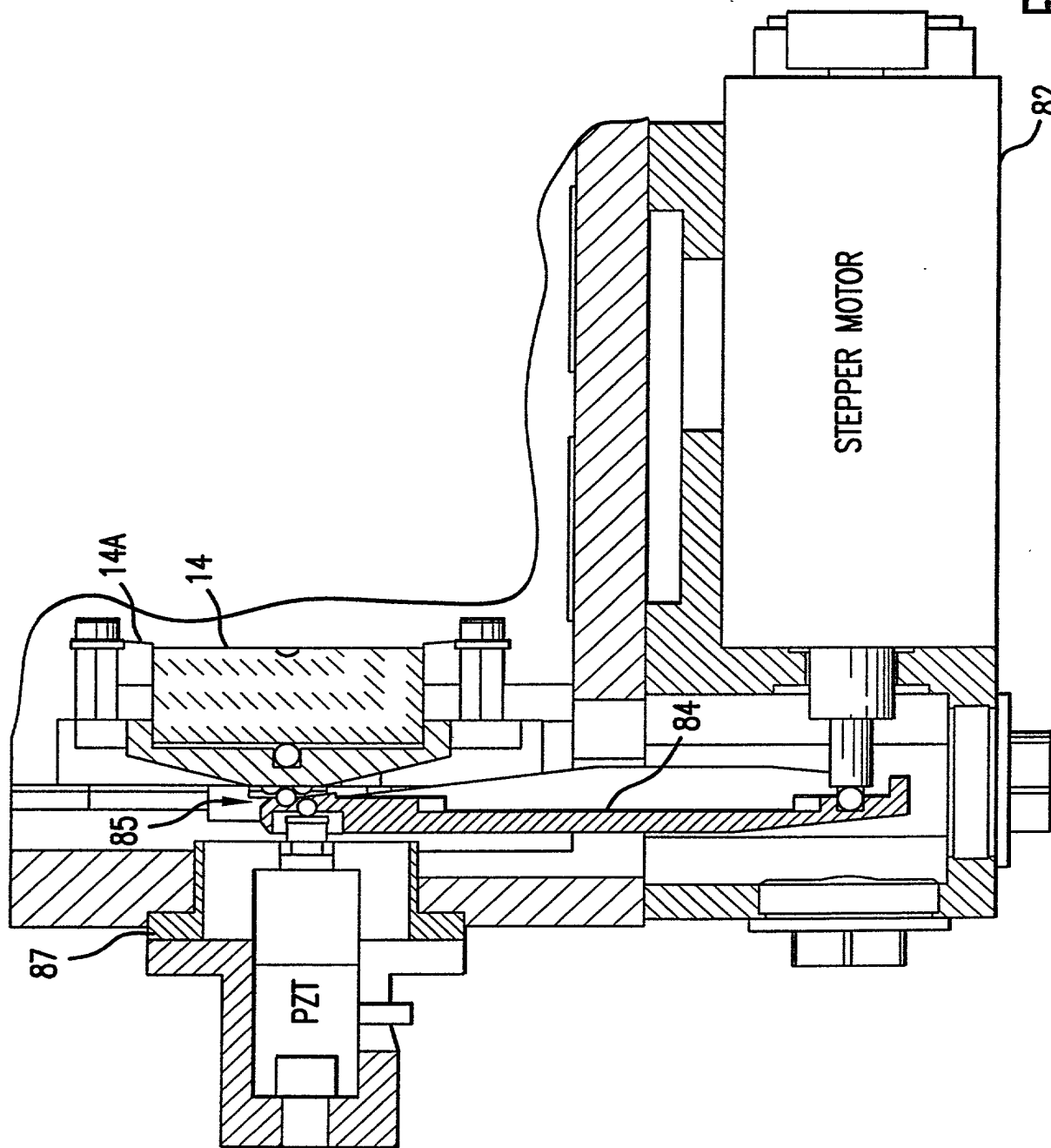


FIG. 16B2

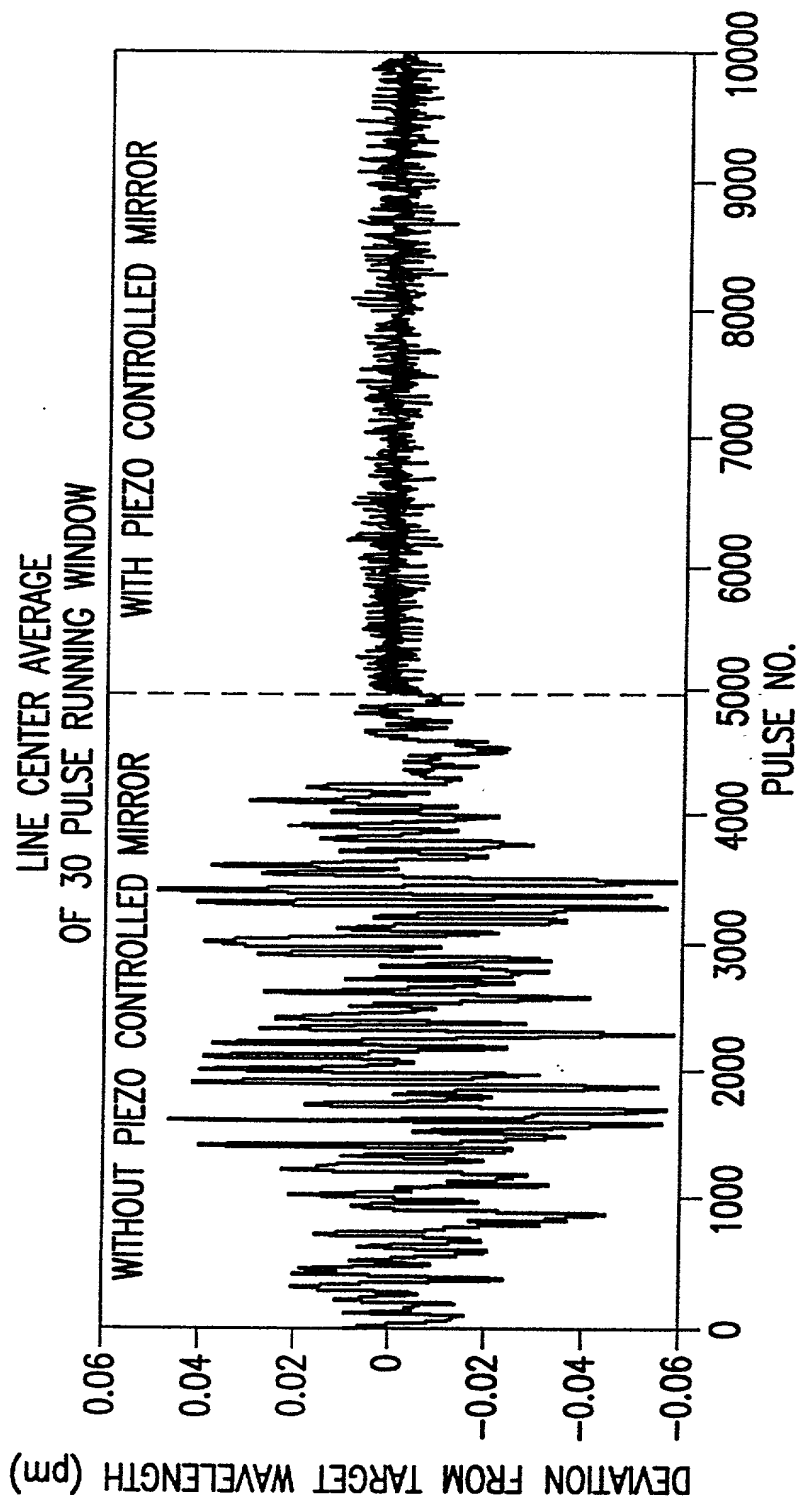


FIG.16C

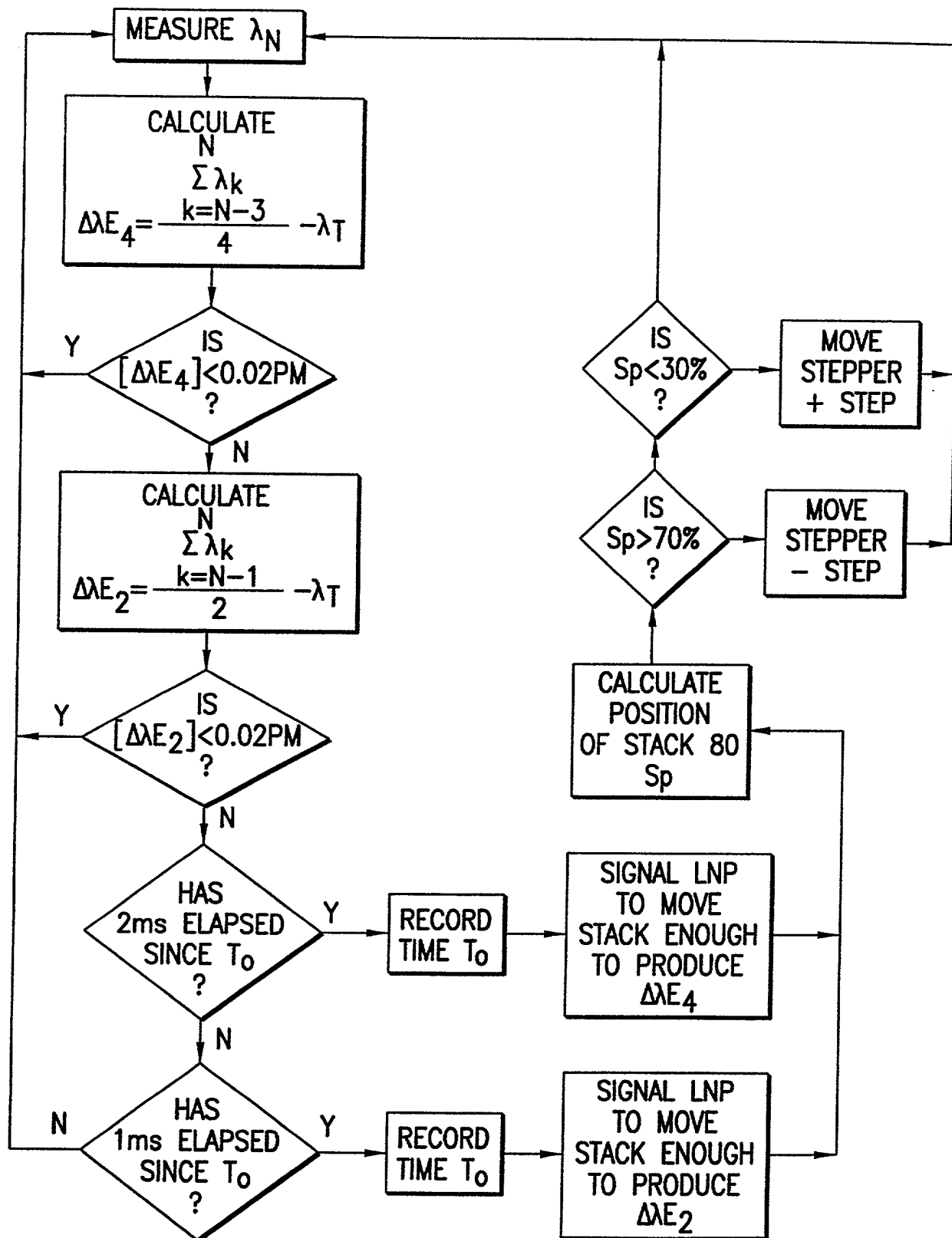


FIG.16D

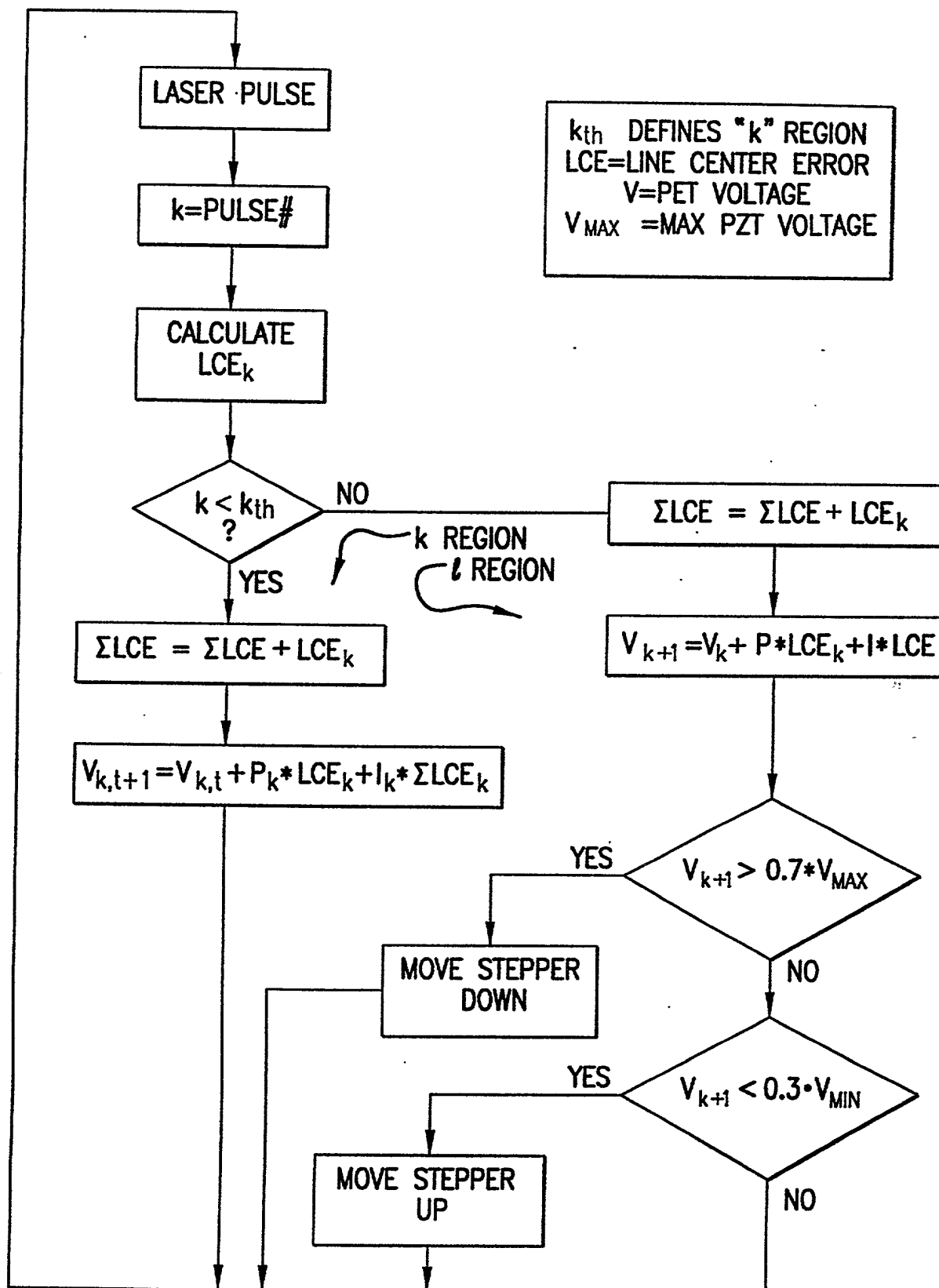


FIG.16E

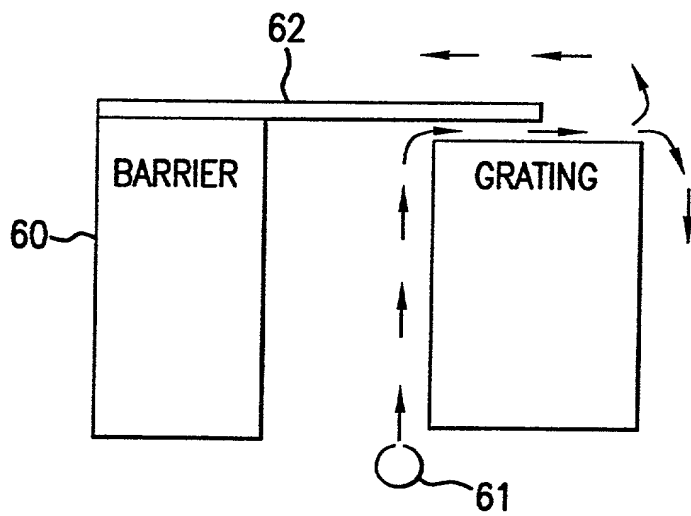


FIG.17

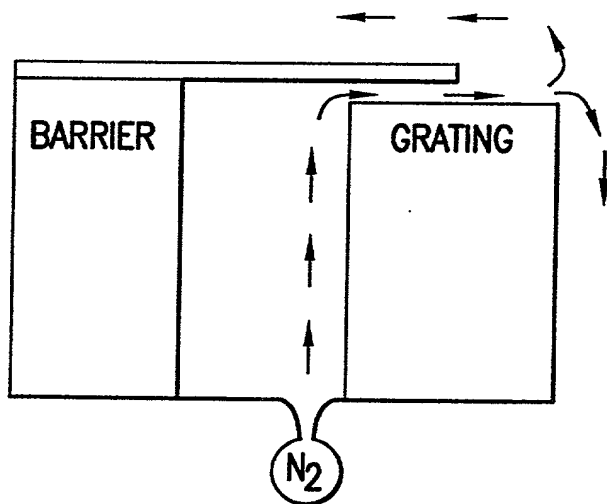


FIG.17A

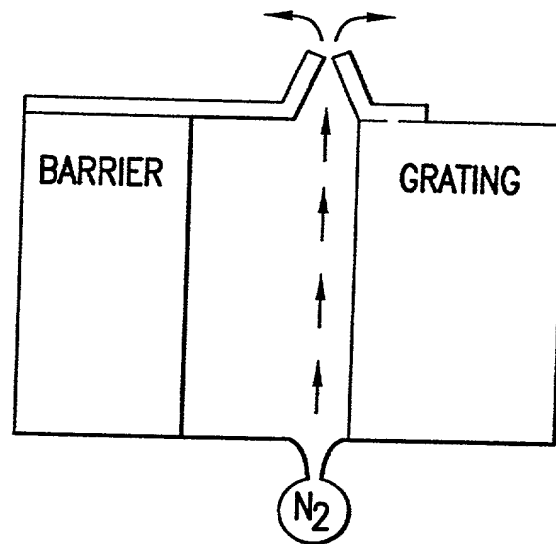


FIG.17B

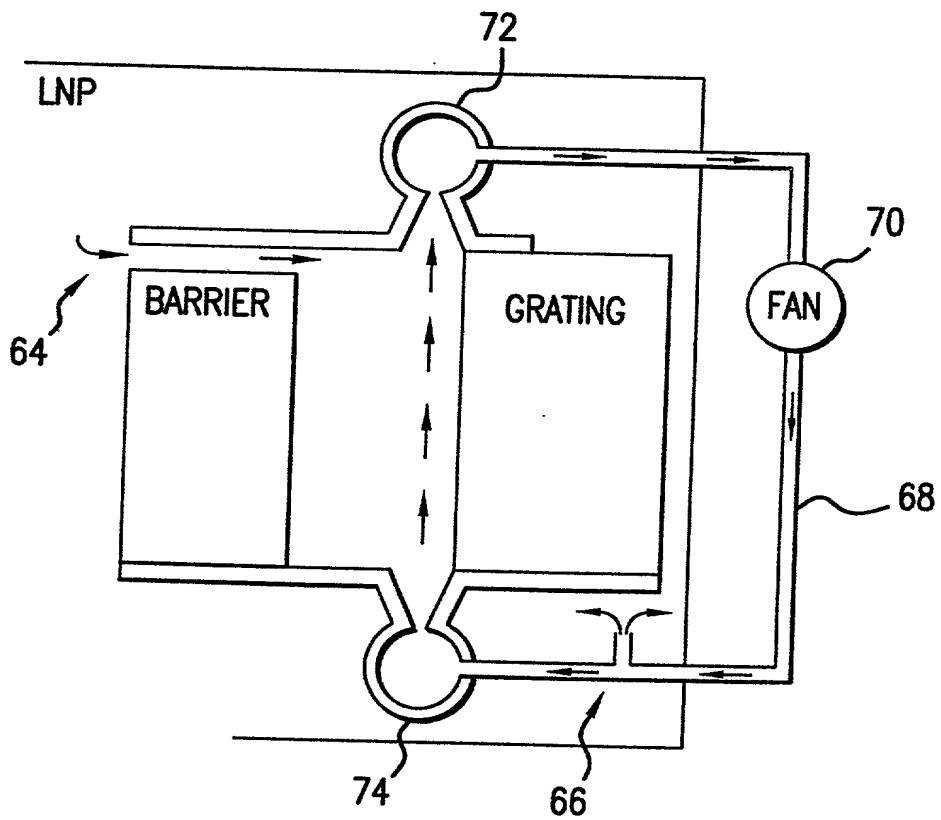


FIG.17C

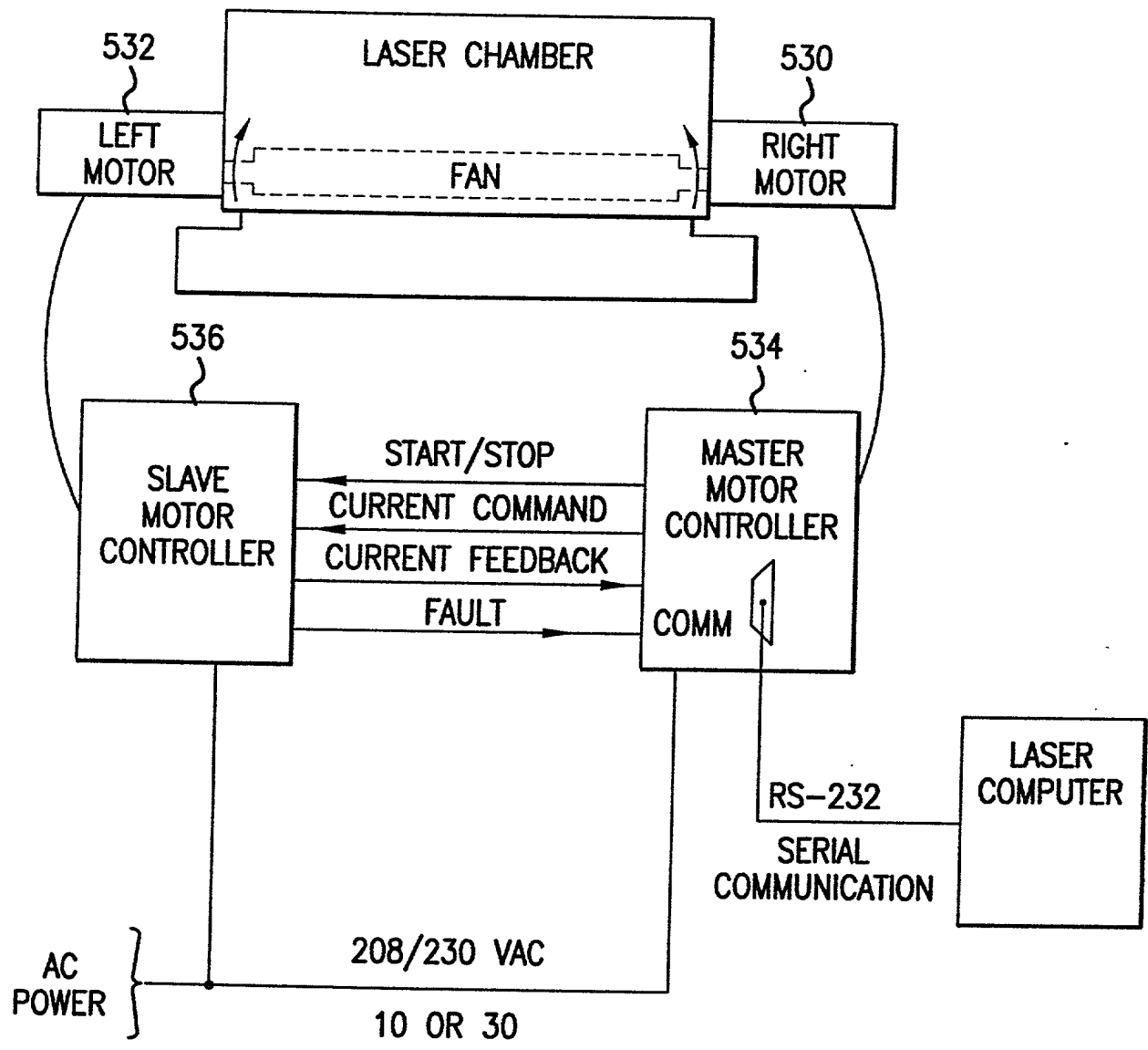


FIG. 18

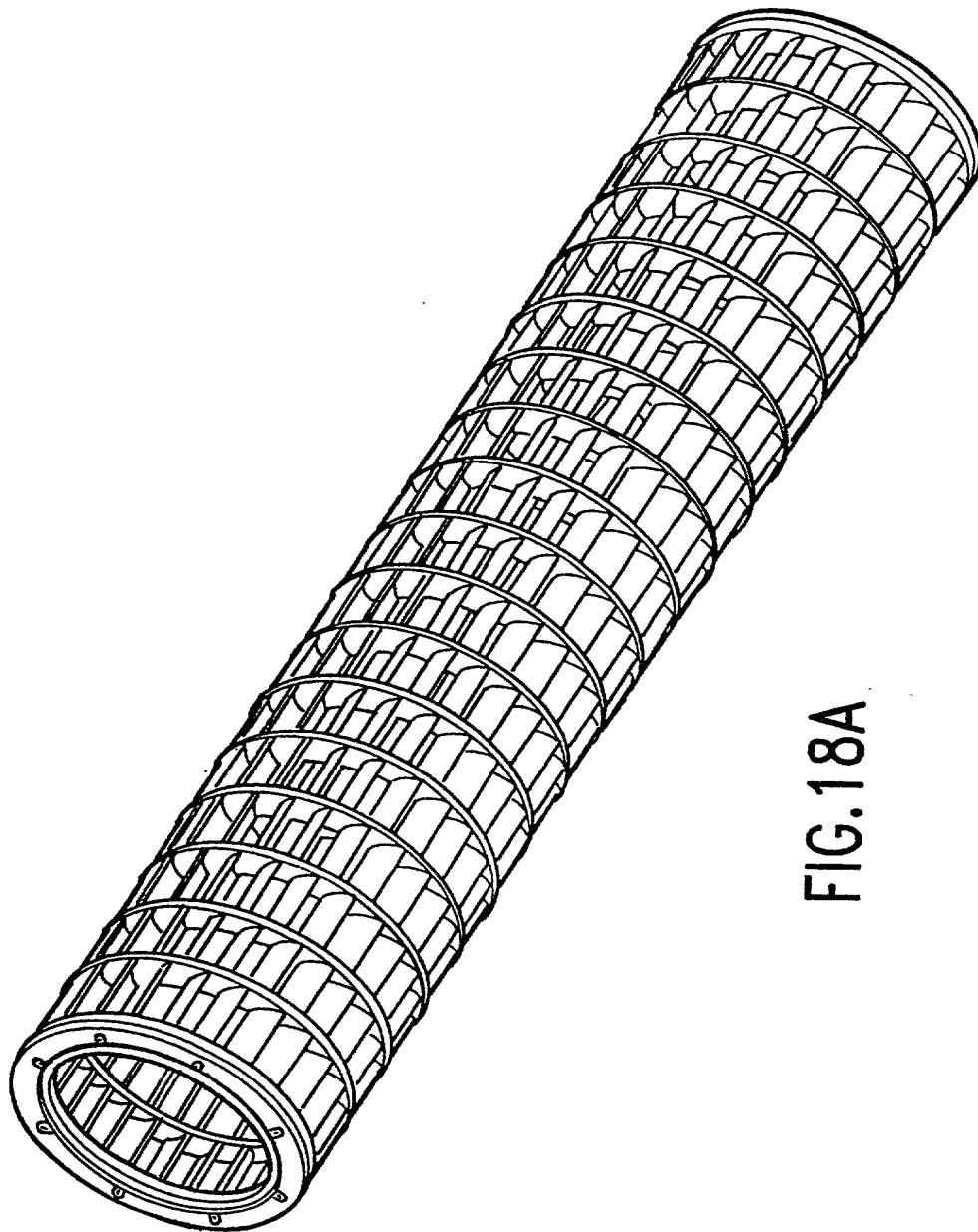


FIG.18A

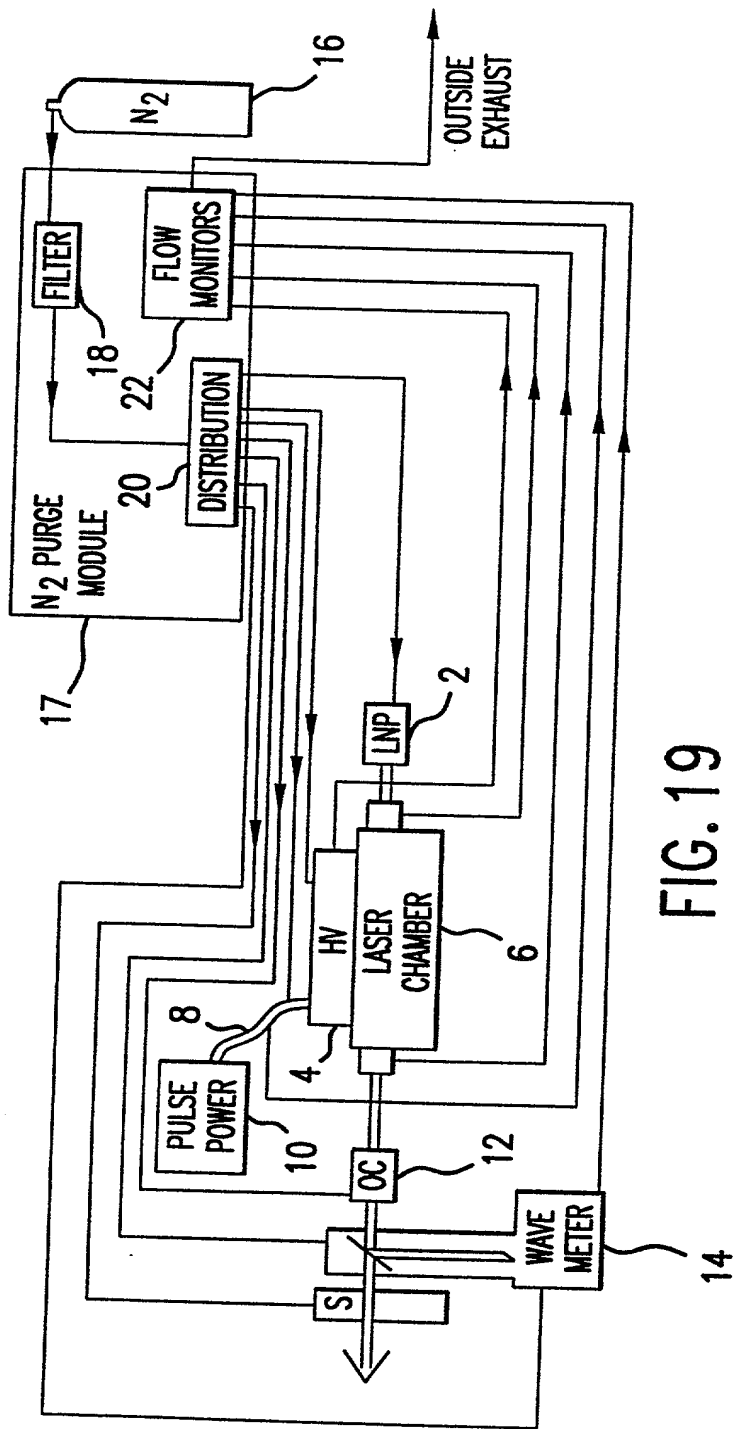


FIG. 19

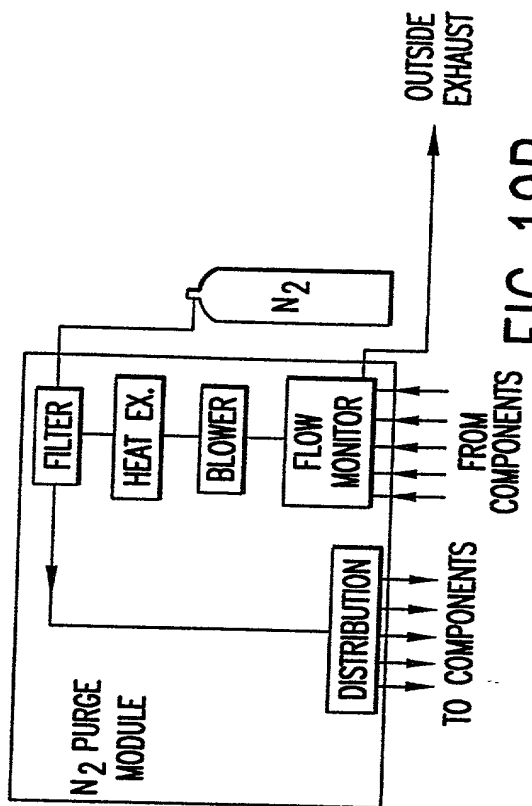


FIG. 19B

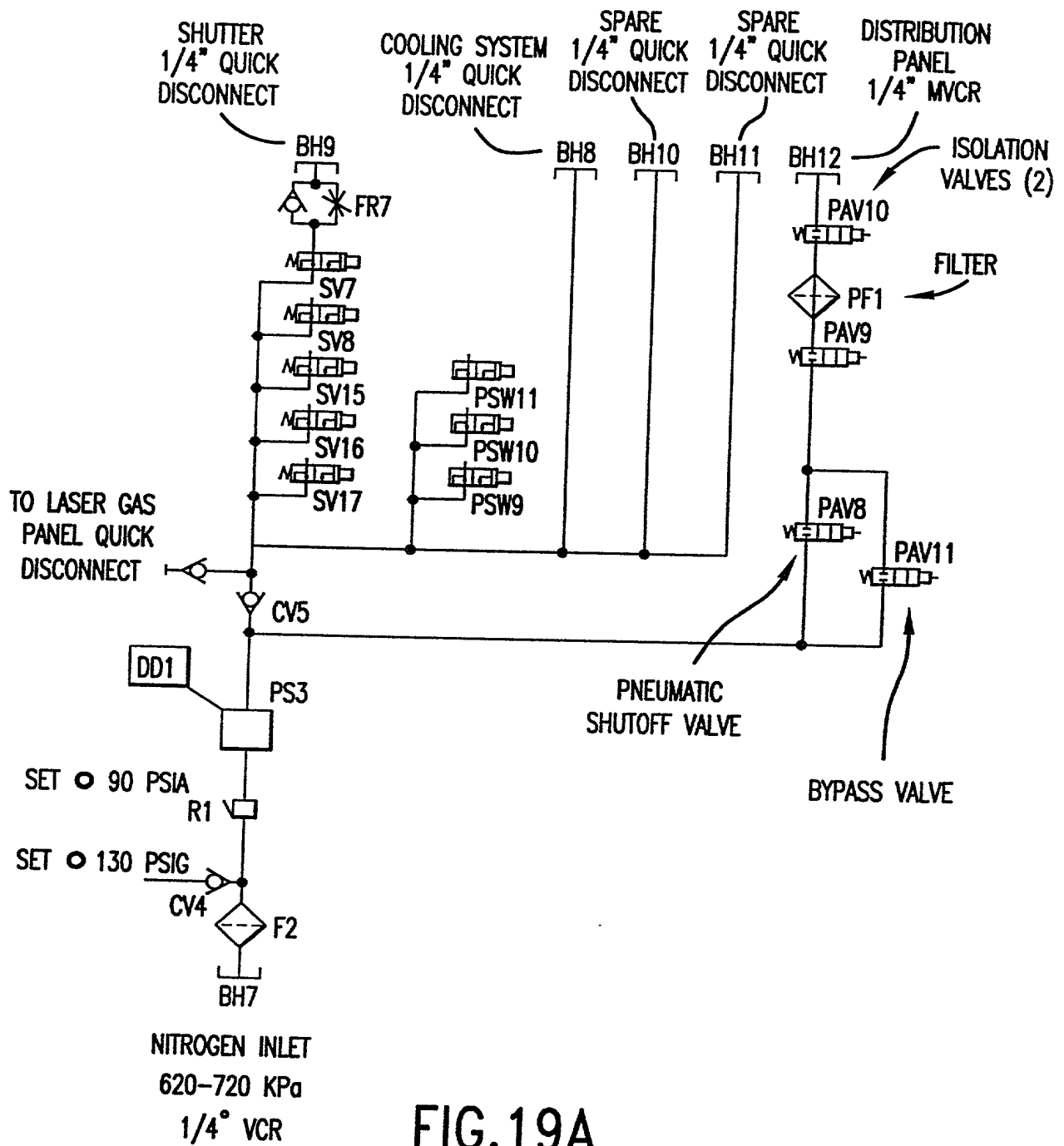
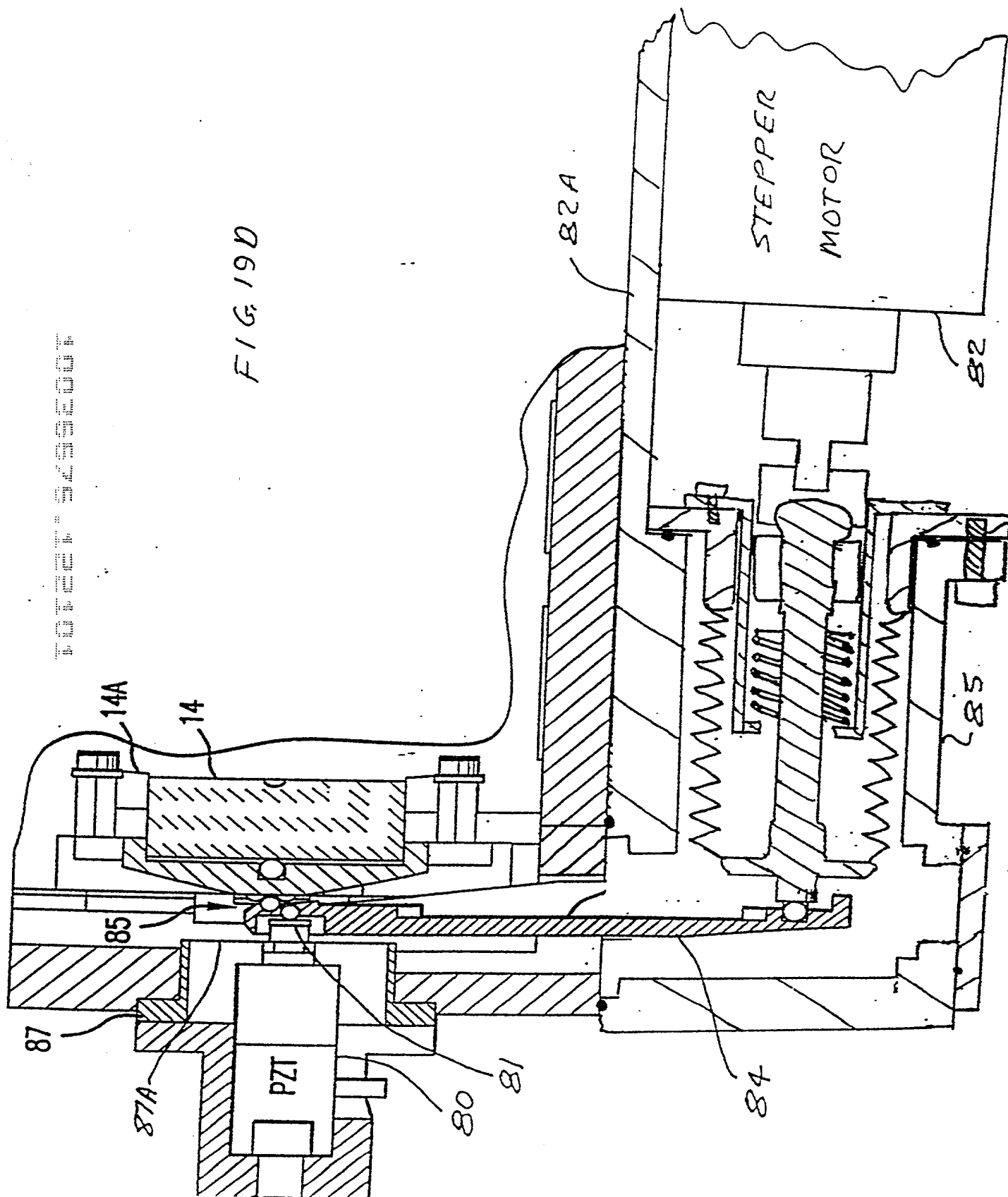


FIG.19A

F1G19D



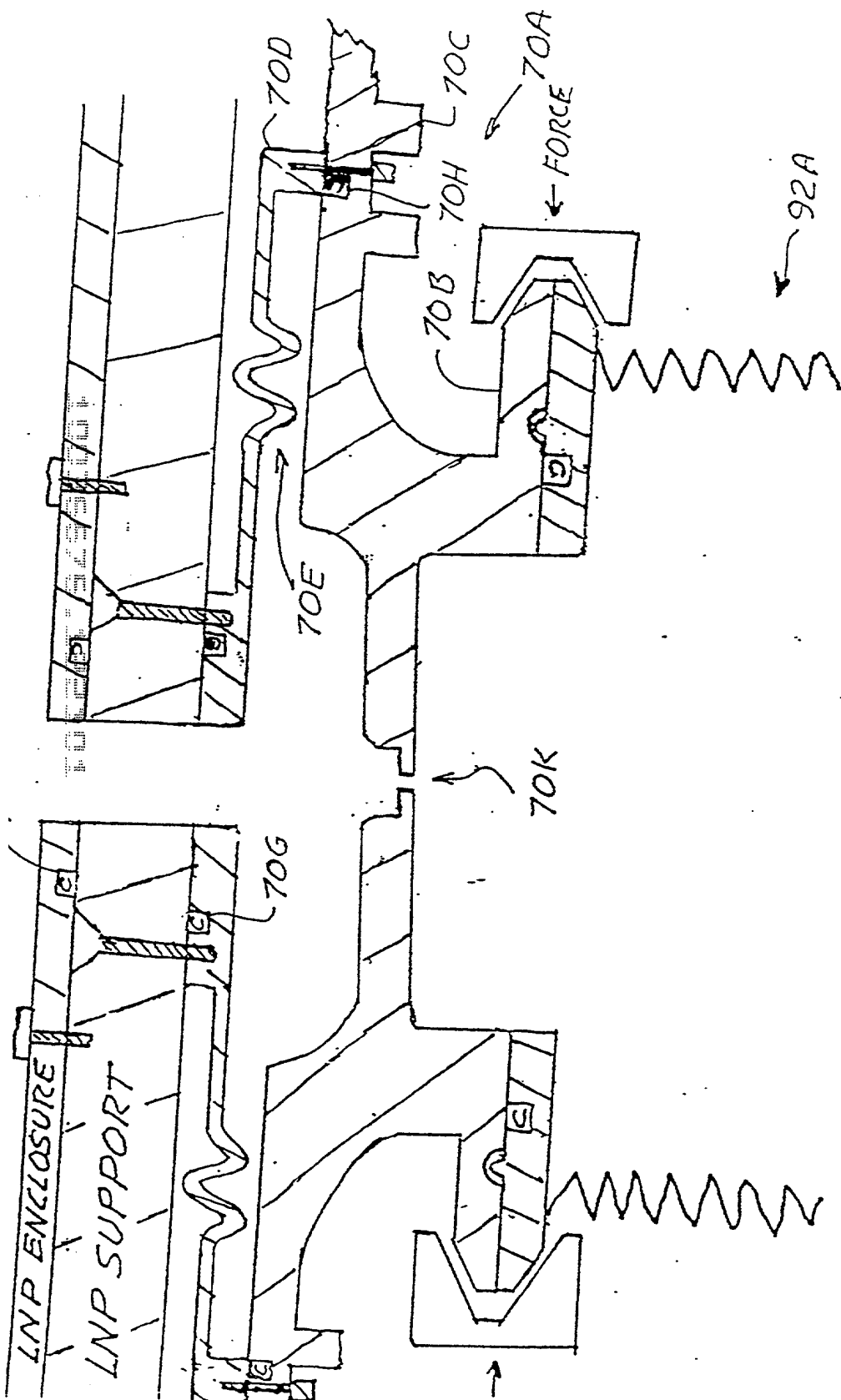


FIG. 19E

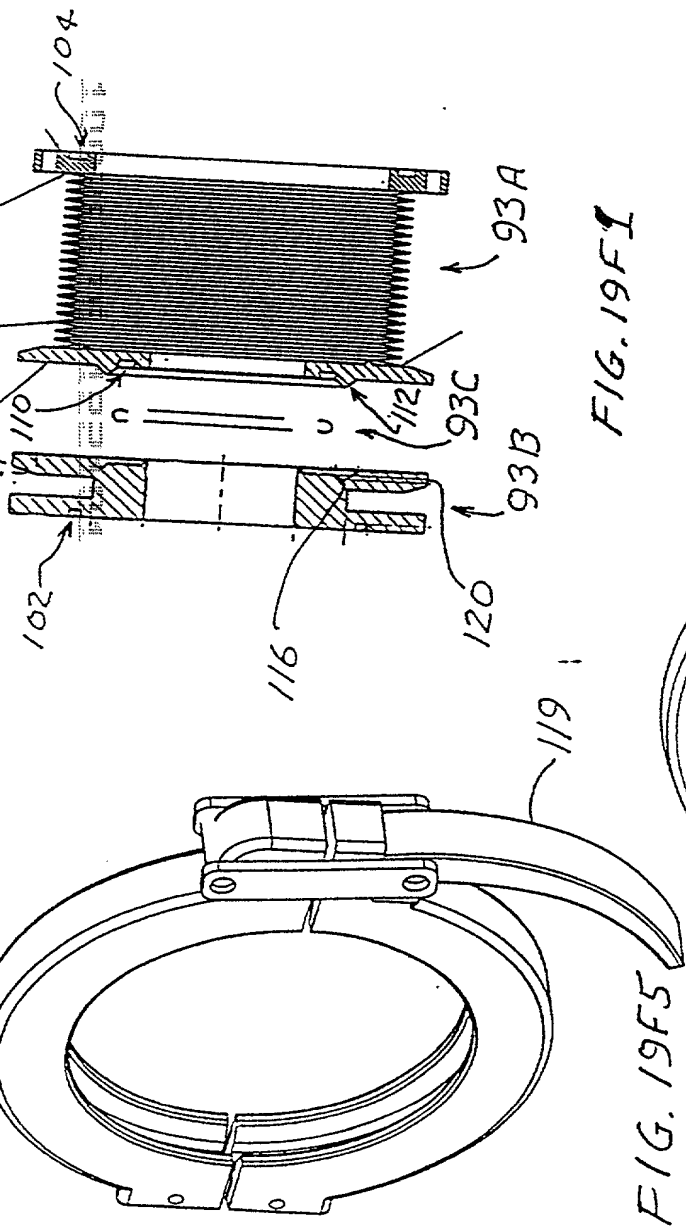


FIG. 19F1

FIG. 19F5

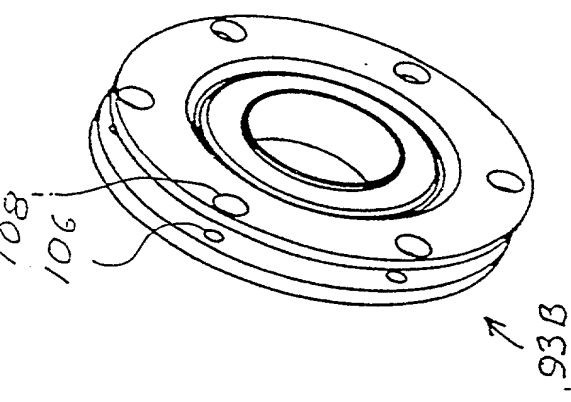


FIG. 19F2

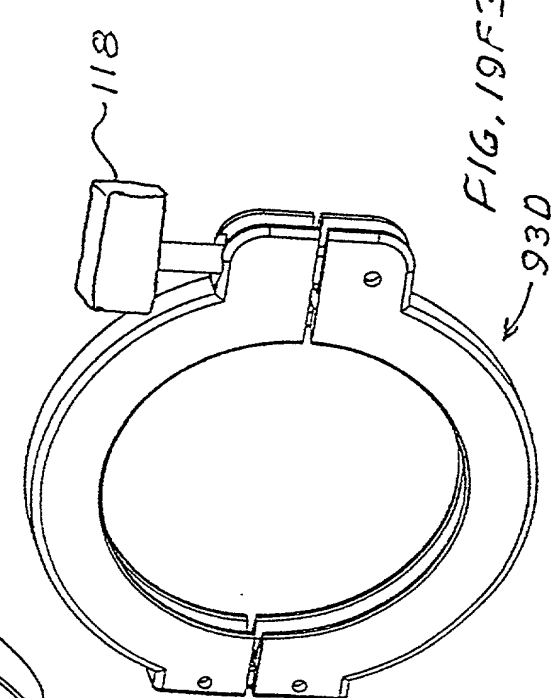


FIG. 19F3

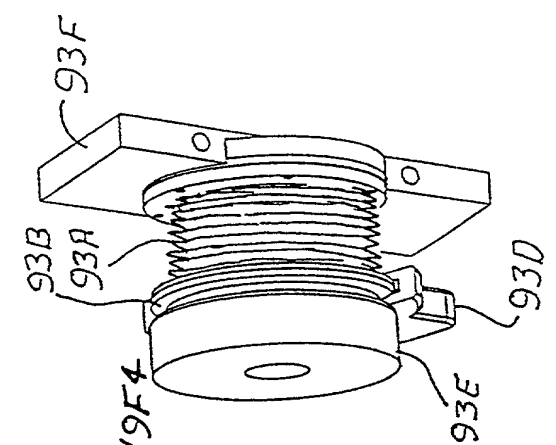


FIG. 19F4

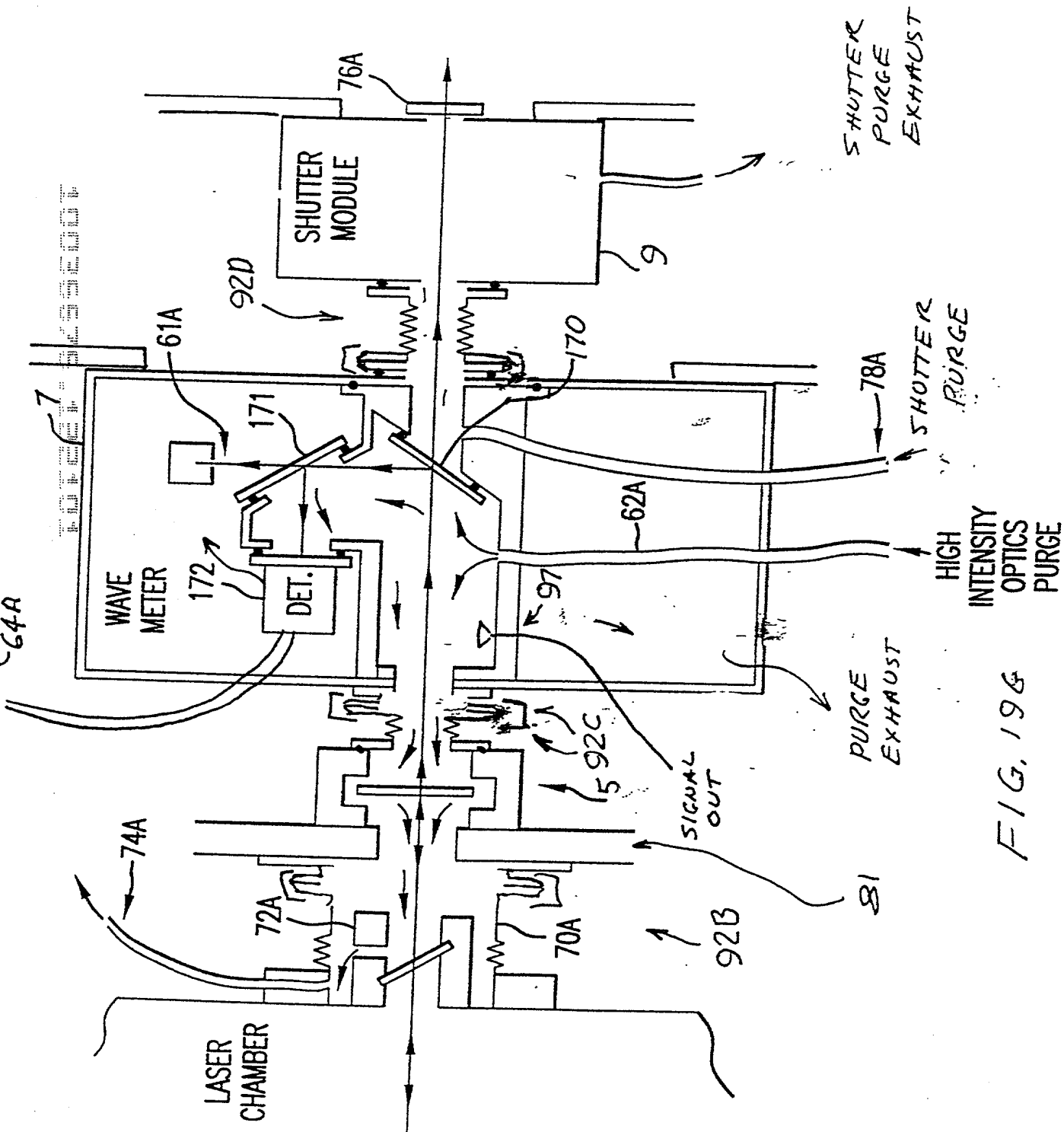


FIG. 19G

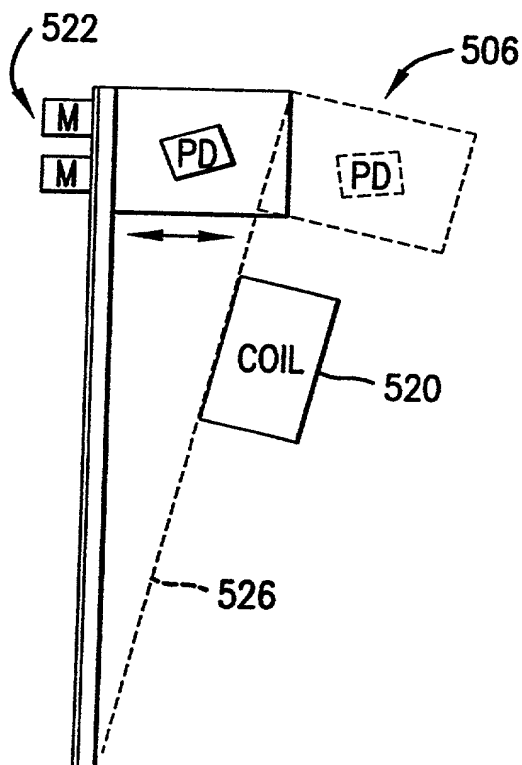
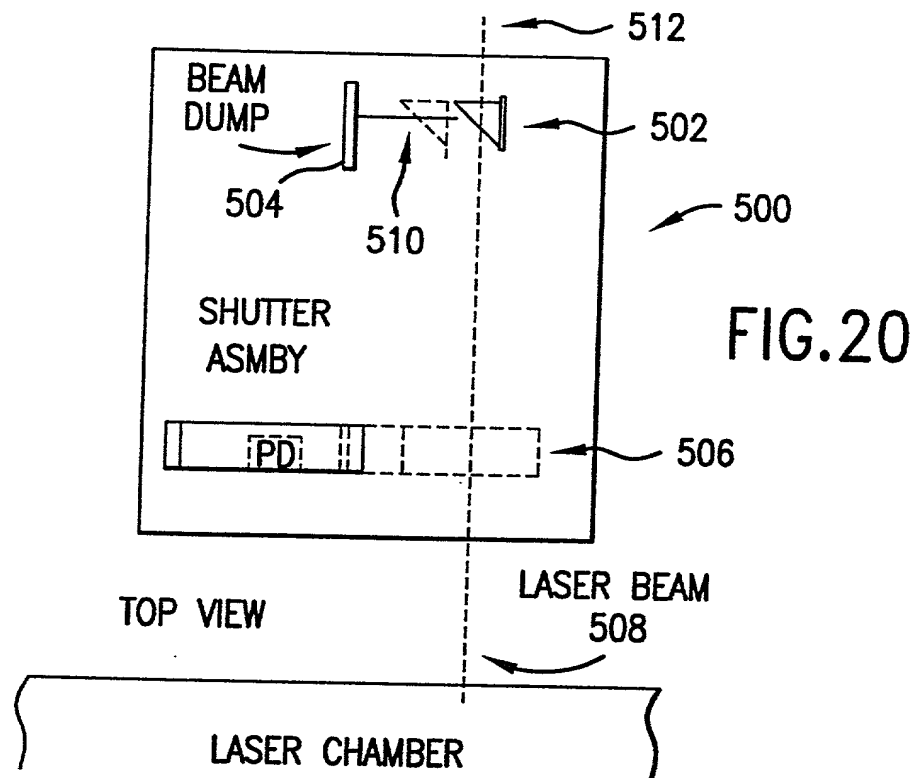


FIG. 20A

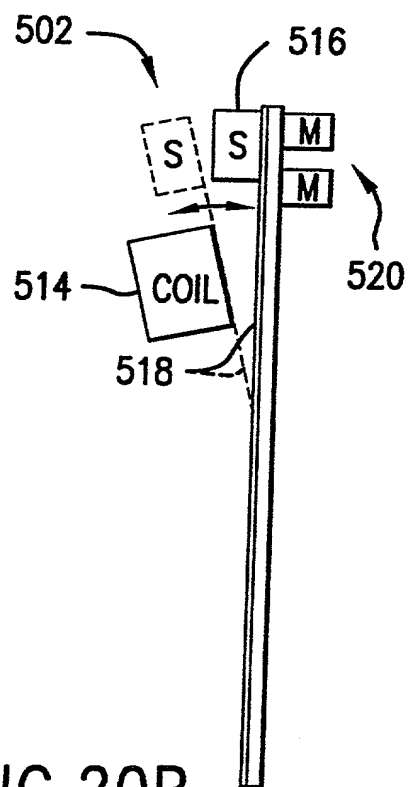


FIG. 20B

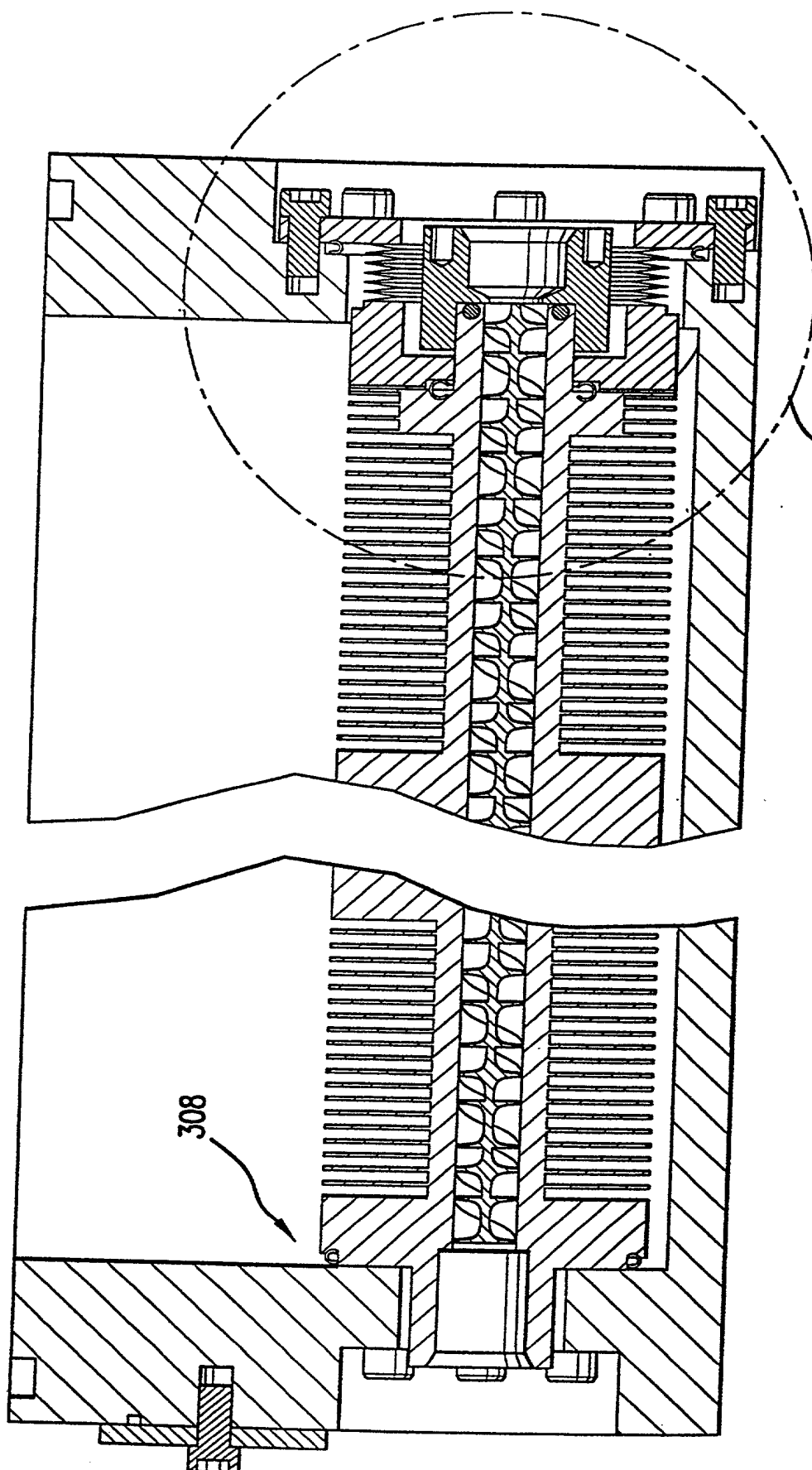


FIG.21A

FIG.21

308

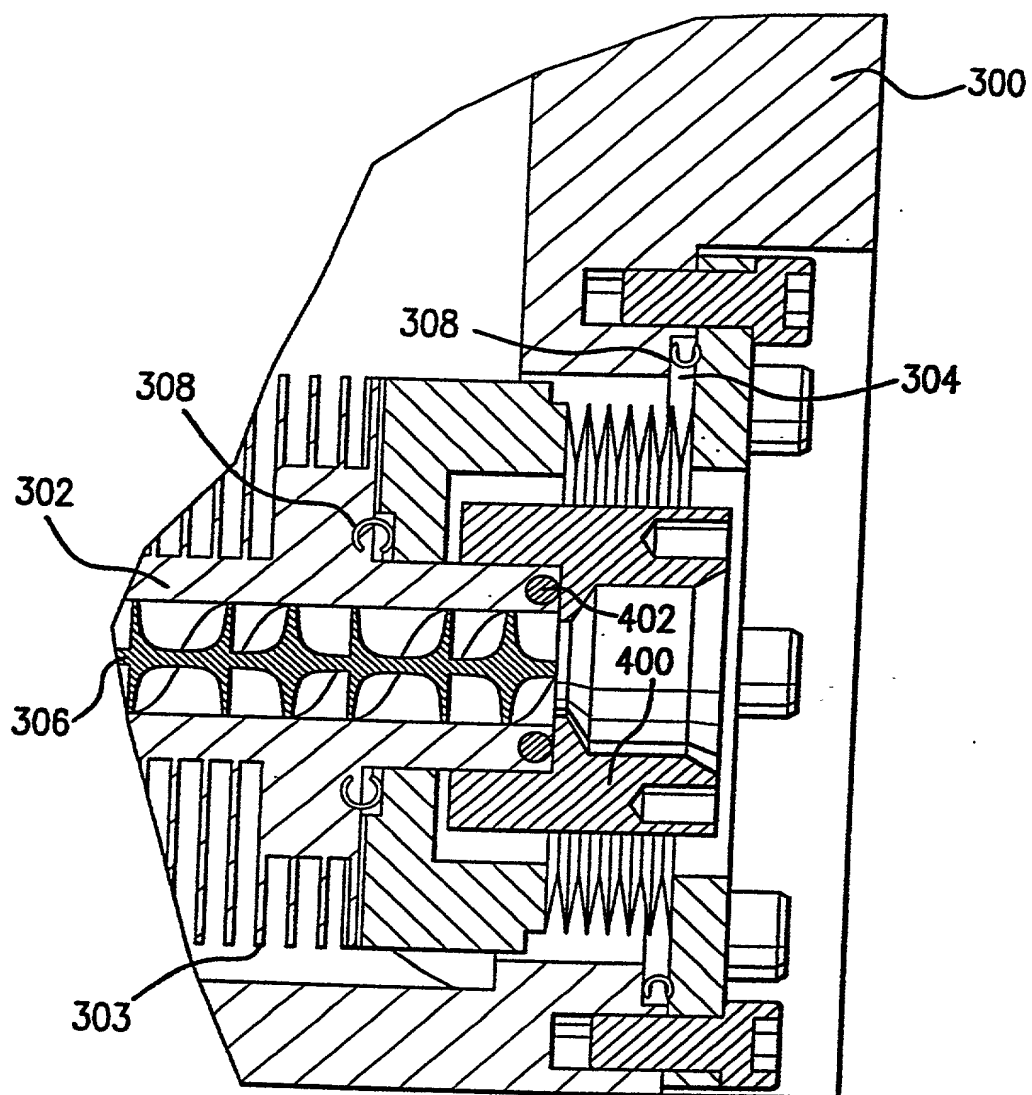


FIG. 21A

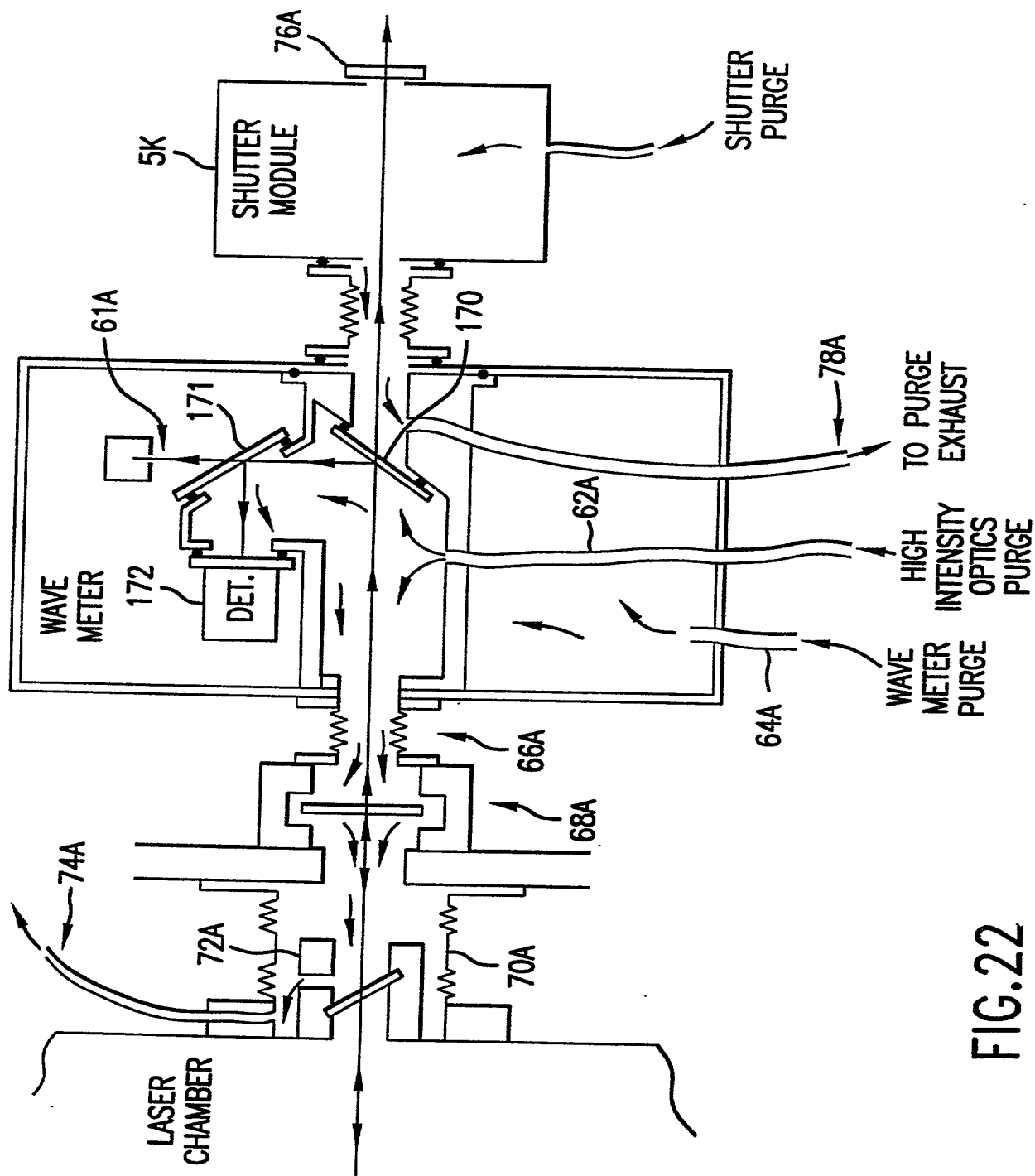


FIG. 22

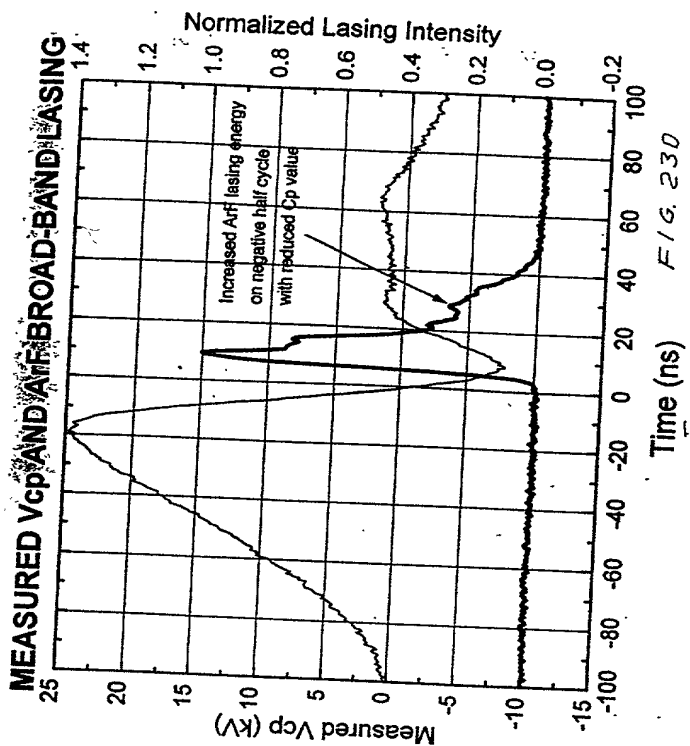
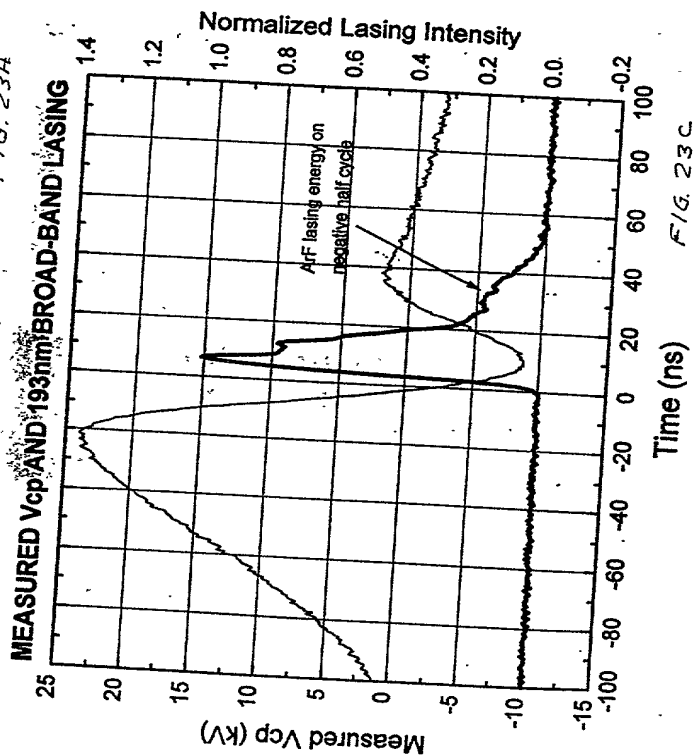
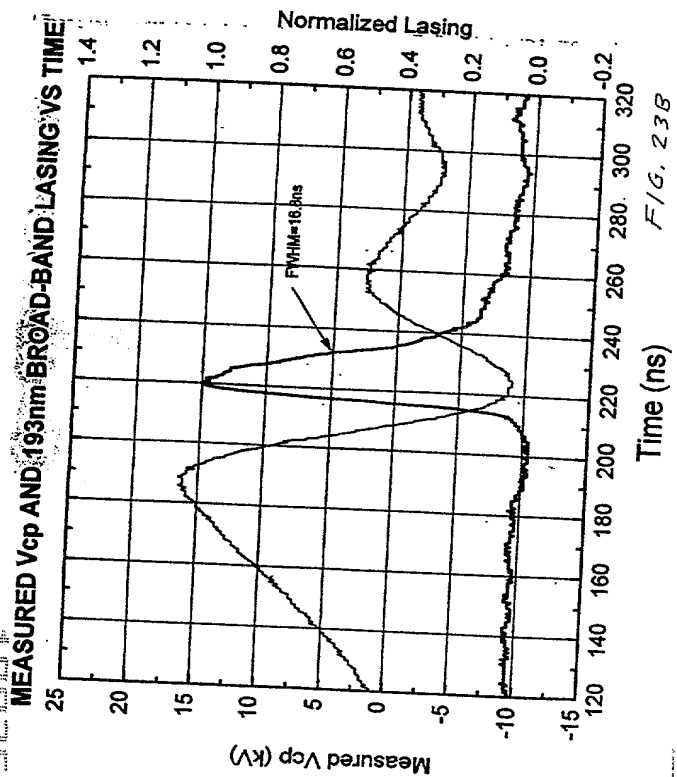
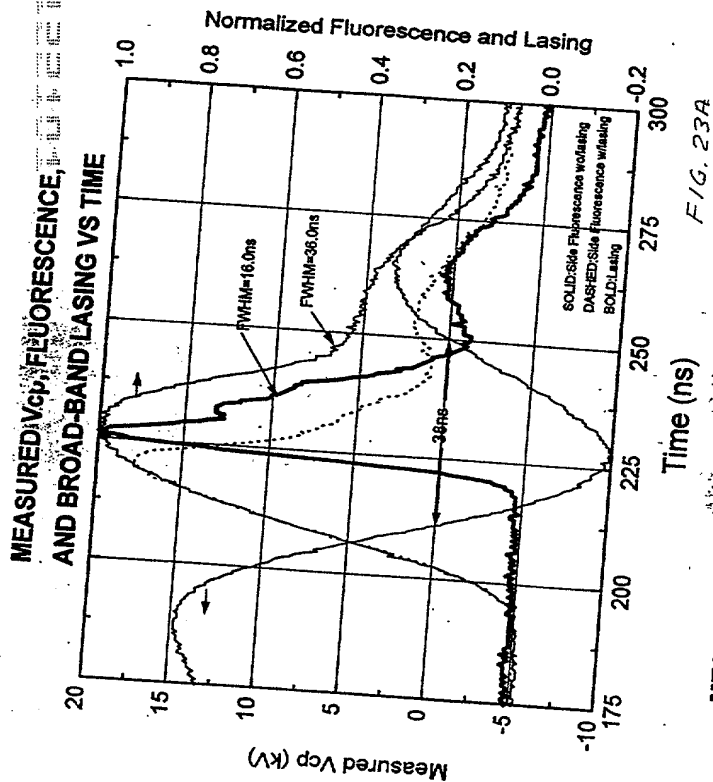


FIG. 23F

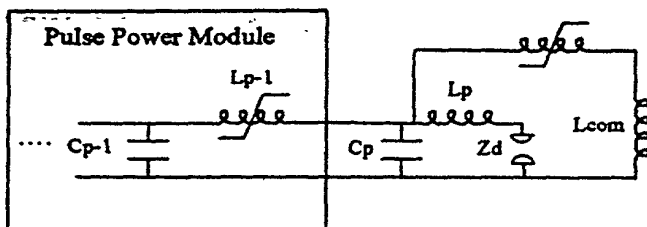


Fig. 11. Schematic diagram of the Current Overshoot Maximizer (COM).

FIG. 23G

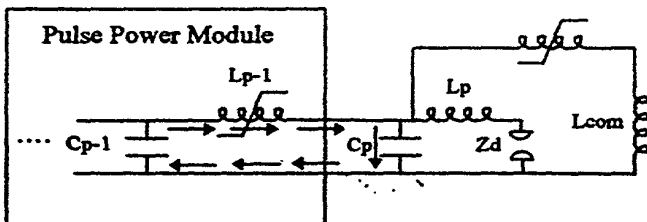


Fig. 12a. Step 1 in COM operation: pulse charging of Cp .

FIG. 23H

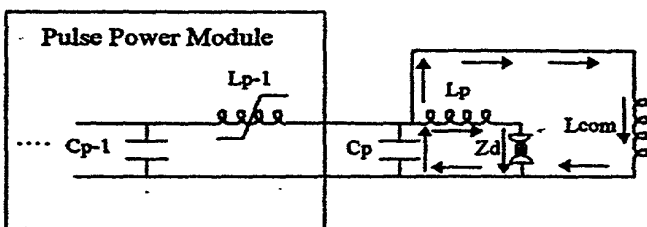


Fig. 12b. Step 2 in COM operation: COM switches on nearly simultaneous with beginning of avalanche discharge.

FIG. 23I

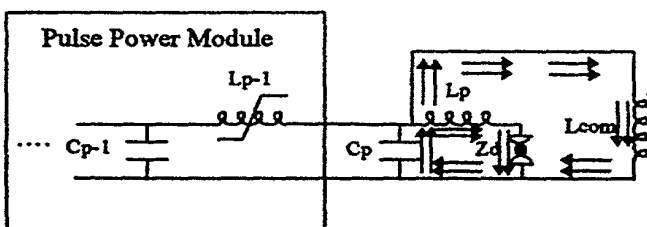


Fig. 12c. Step 3 in COM operation: current flow builds in the discharge and $Lcom$.

FIG. 23J

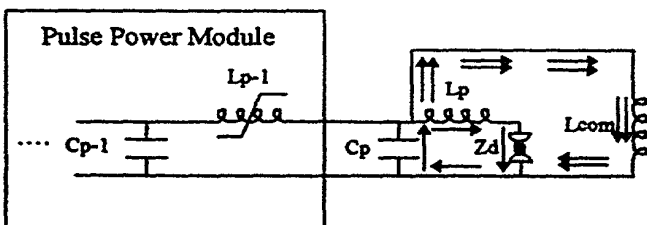


Fig. 12d. Step 4 in COM operation: the voltage on Cp passes through zero and the current flow through the discharge begins to subside, but the Lp inductance and the $Lcom$ inductance force continued current flow from Cp .

FIG. 23K

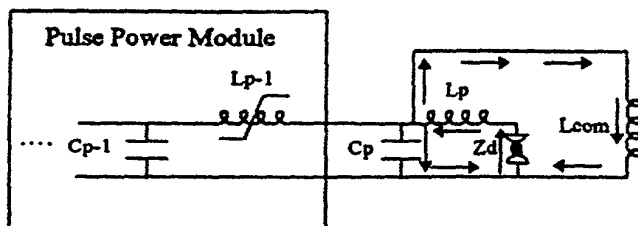


Fig. 12e. Step 5 in COM operation: The current through L_p and the discharge finally reverses and this current flows into C_p and L_{com} .

FIG. 23L

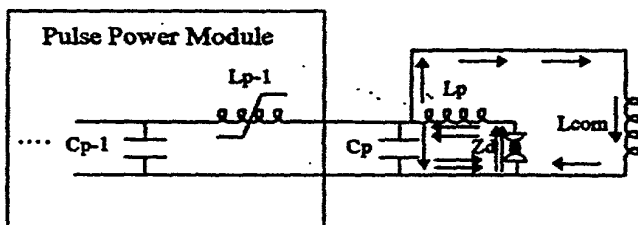


Fig. 12f. Step 6 in COM operation: The reverse current flow through the discharge is driven by both the L_{com} current and the negative voltage on C_p and thus is increased over that obtained by V_{cp} overshoot only.

FIG 23 M

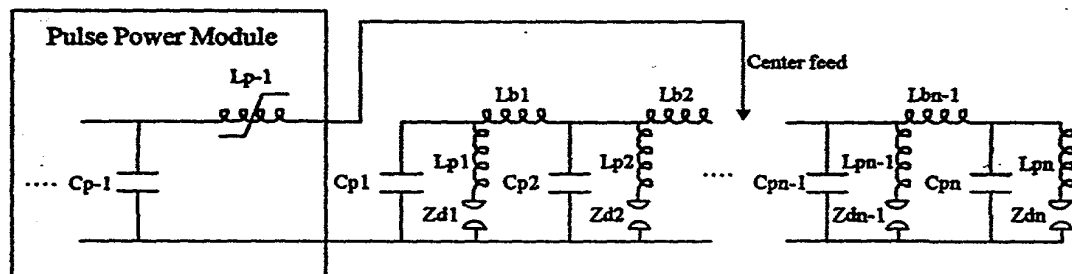


Fig. 13. A more accurate schematic representation of the laser chamber showing the distributed circuit components.

FIG. 23 N

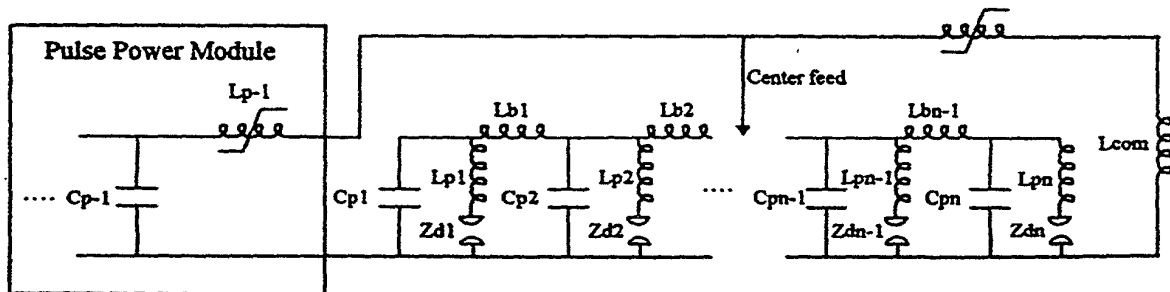
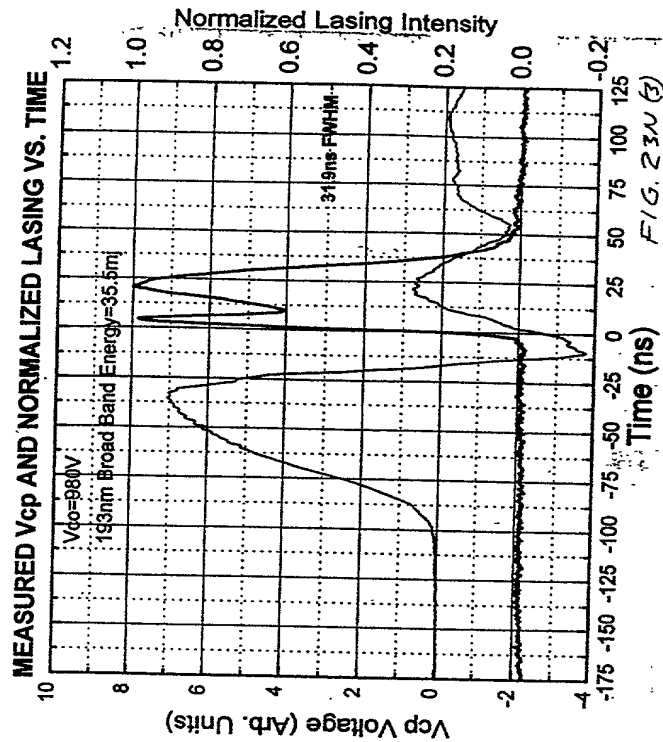
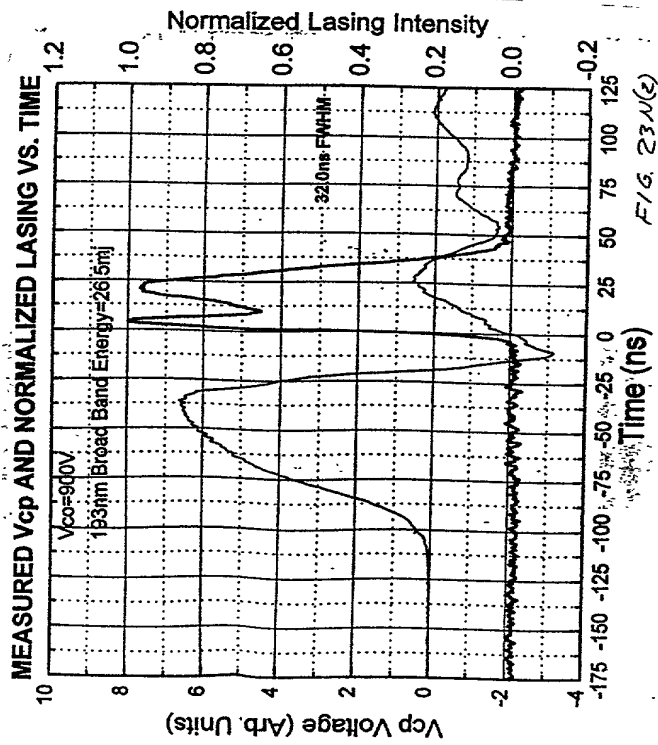
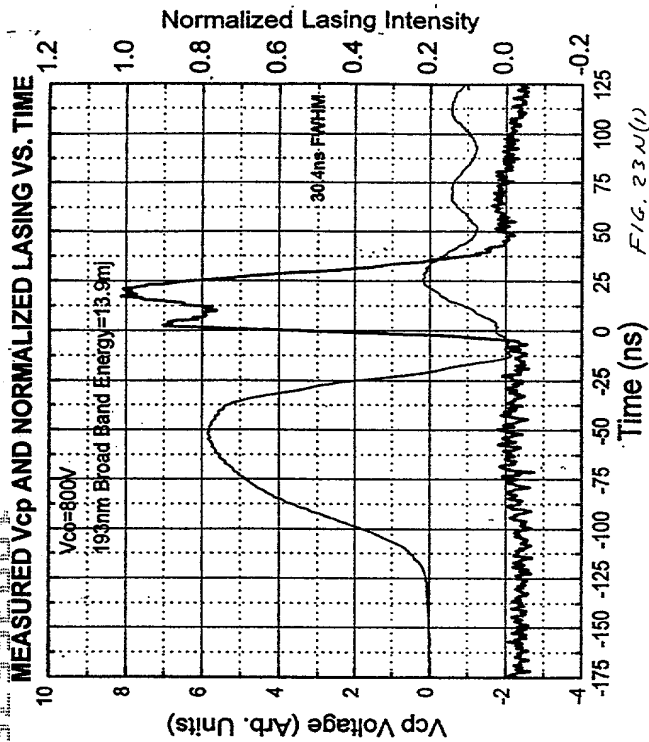
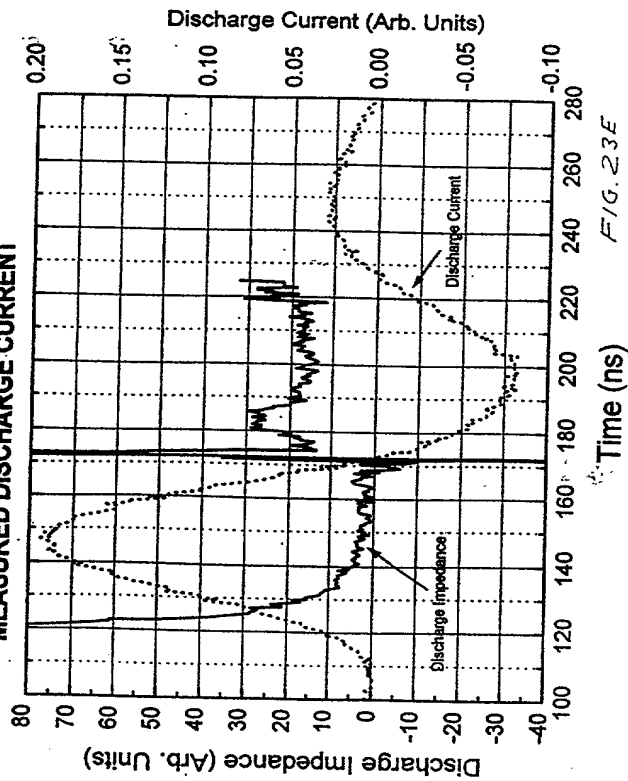


Fig. 14. The COM inductor and its relation to the distributed circuit components of the laser chamber.

CALCULATED DISCHARGE IMPEDANCE AND MEASURED DISCHARGE CURRENT



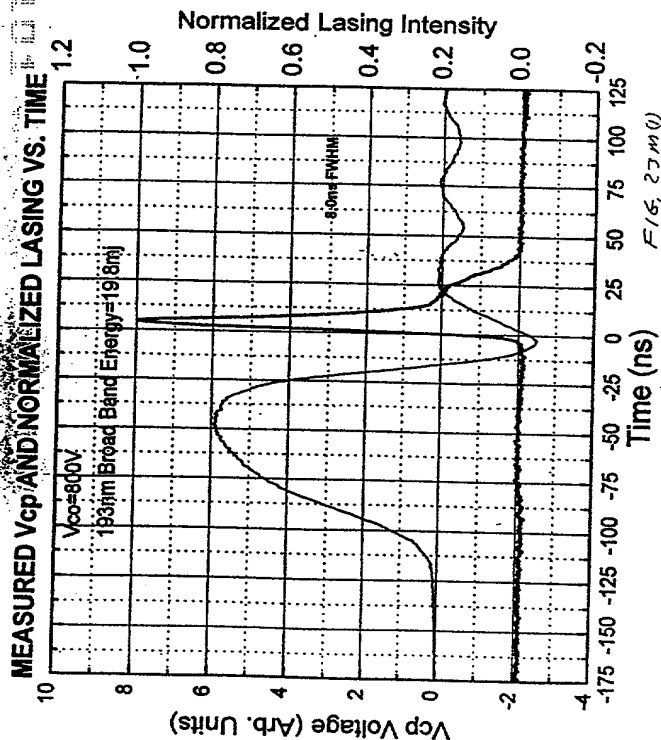


FIG. 23m(i)

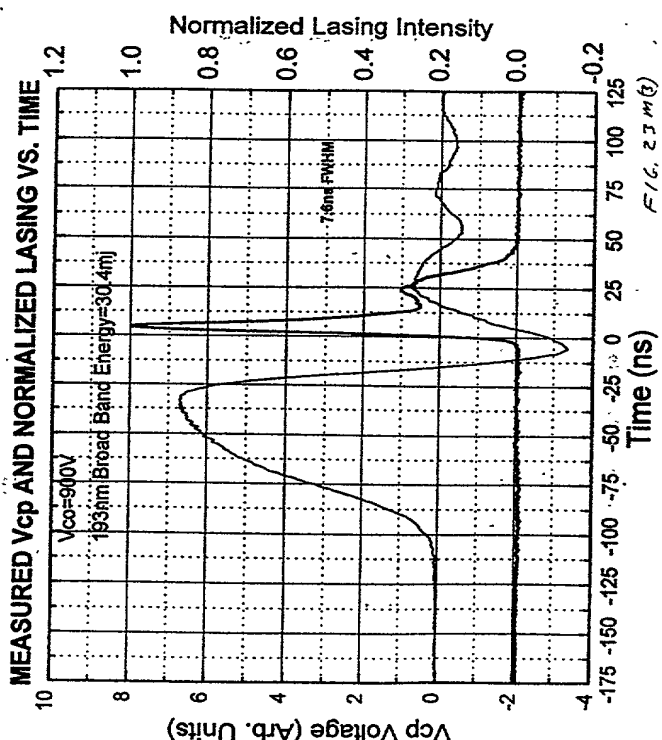


FIG. 23m(j)

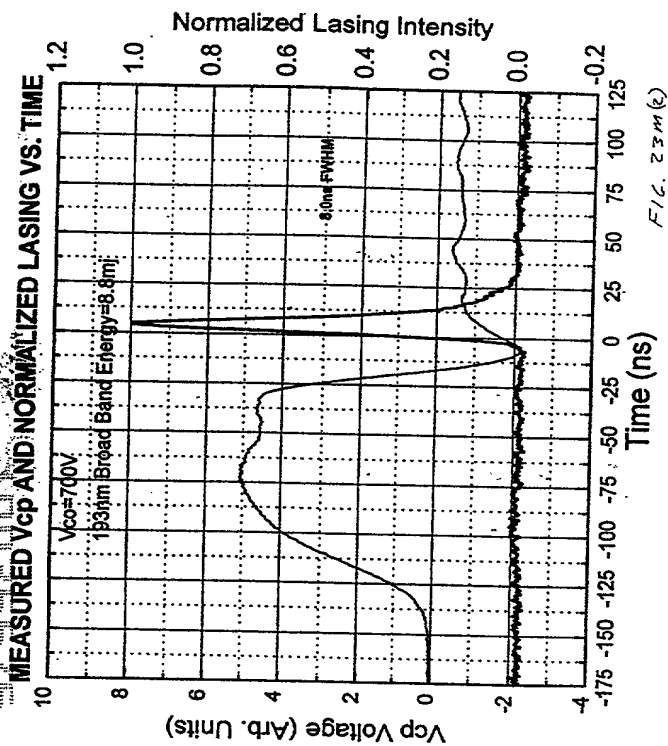


FIG. 23m(k)

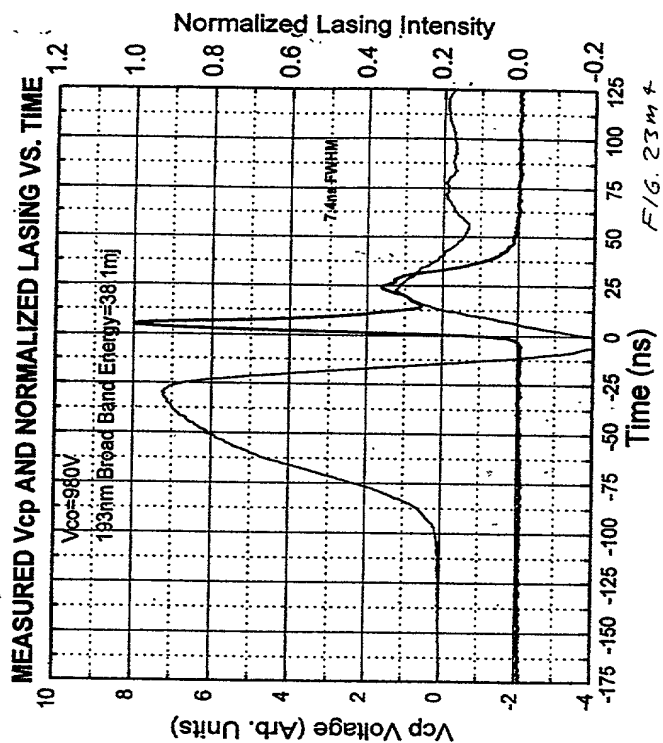
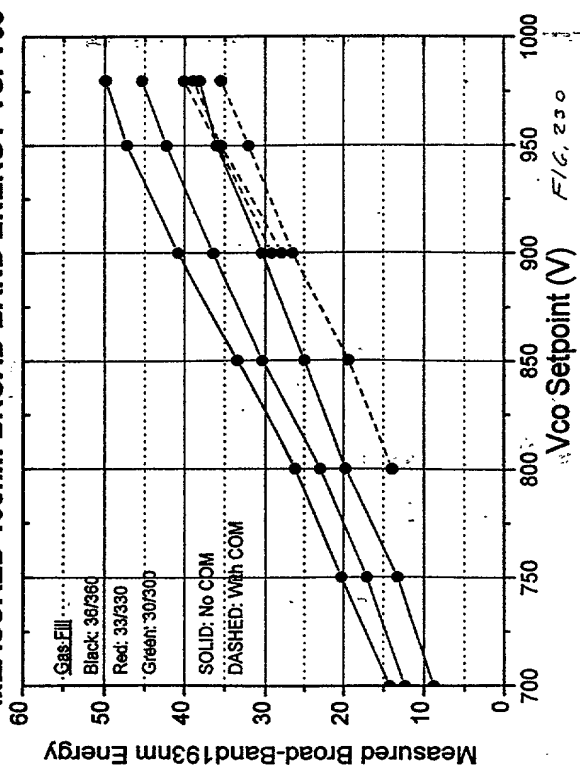
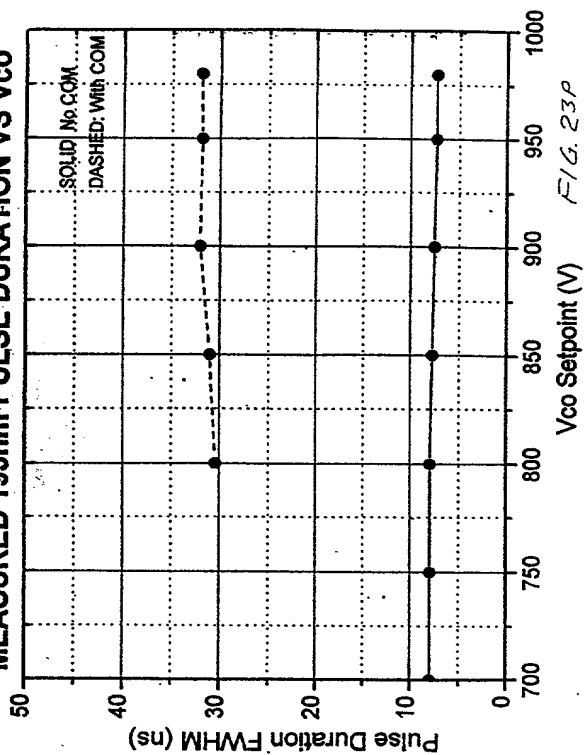


FIG. 23m(l)

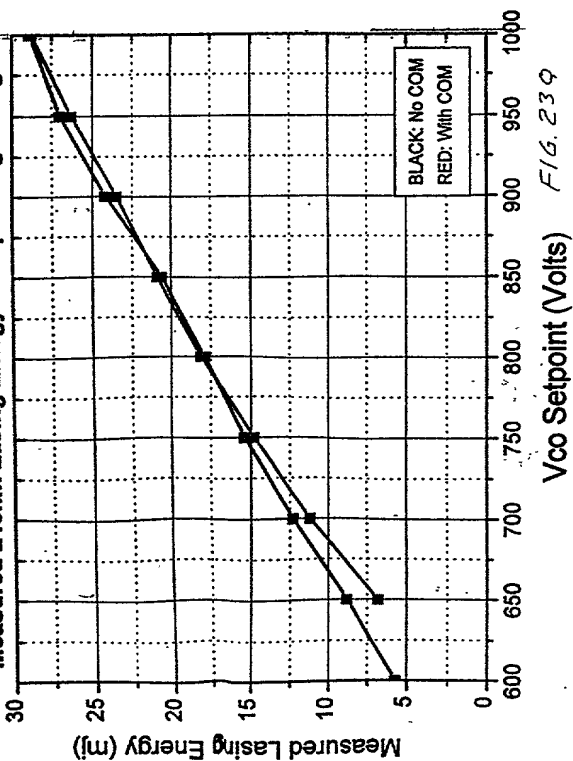
MEASURED 193nm BROAD-BAND ENERGY VS. Vco



MEASURED 193nm PULSE DURATION VS Vco



Measured 248nm Lasing Energy vs. Operating Voltage



Measured 248nm FWHM Spectrum vs. Operating Voltage

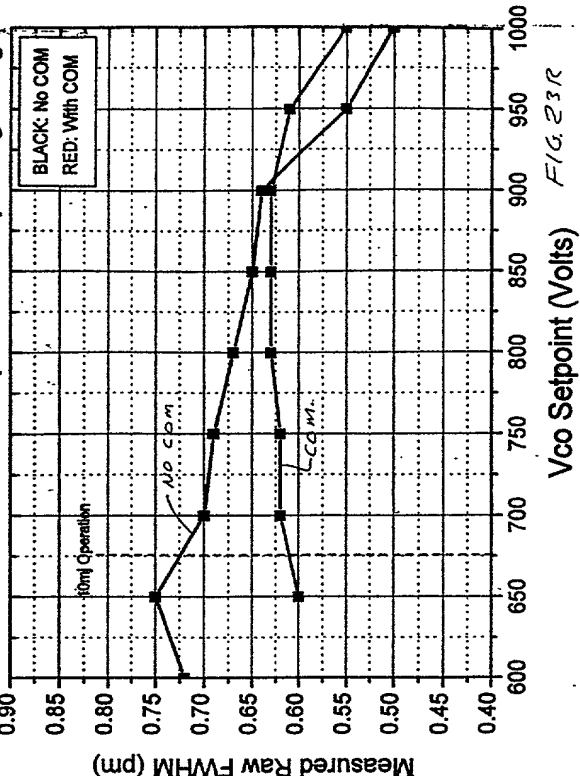
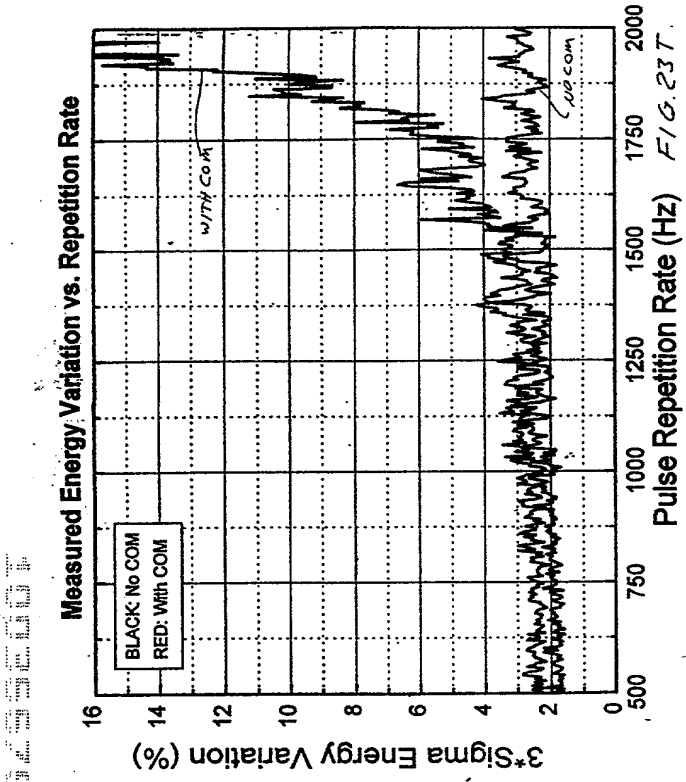
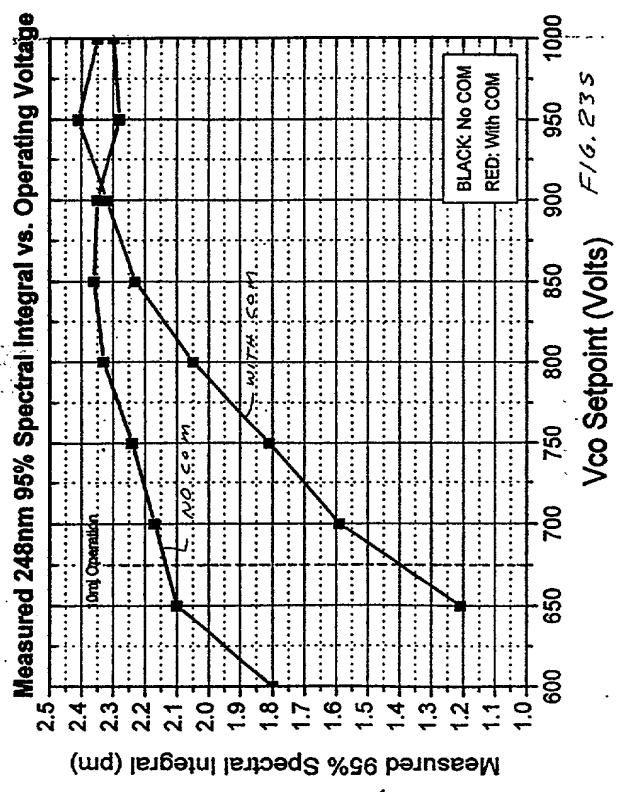


FIG. 23A



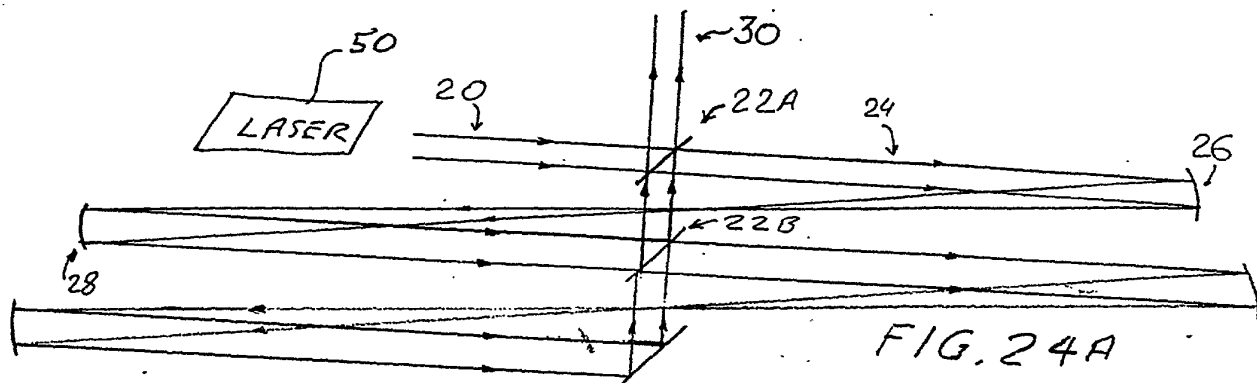


FIG. 24A

